

CHAPTER I

MISSION, COMMAND, ORGANIZATION, AND RESOURCES

Mission

The reorganization of USAF aerospace defense and surveillance and warning resources, under consideration since the spring of 1977, finally got underway in late 1979. On 1 October parts of Aerospace Defense Command's mission, as delineated in AFR 23-9, "Organization and Mission - Field," together with related units, manpower, and systems, were transferred to Tactical Air Command and Air Force Communications Service.¹ The remainder went to Strategic Air Command on 1 December.² TAC became responsible for day-to-day organization, training, equipping, administration, and preparation of aerospace defense interceptors and atmospheric warning radars; SAC had the same responsibility for missile warning and space surveillance systems; and AFCS took over most of ADCOM's former communications and electronics assets. Also on 1 December, a new direct reporting unit, Aerospace Defense Center, was designated and activated in Colorado Springs.³ Its new mission regulation stated:

"... ADC provides staff support for Air Force functions and responsibilities required to perform the NORAD/ADCOM strategic aerospace defense mission. It serves as Air Force field agency with coordinating authority [*] for integrating Air Force activities in the strategic aerospace defense mission area."⁴

After 1 December the major command ADCOM no longer had a mission, but to the end of 1979 it had not yet been officially disestablished.

The reorganization changed only the manner in which the USAF henceforth would manage the resources it devoted to aerospace defense. Operational control of those resources remained with the Joint Chiefs of Staff specified command ADCOM and the binational command North American Air Defense Command (NORAD). ADCOM (specified) operated within the JCS structure and so received

* Coordinating authority was defined as authority to require consultation but not to compel agreement. If the parties concerned were unable to obtain agreement, the matter would be referred to the appointing authority, i.e., Hq USAF.

direction from the President through the Chairman of the JCS. The JCS Unified Command Plan, unchanged in 1979, said the specified command's responsibilities were to exercise operational control over US forces assigned, attached, or otherwise made available for warning of attack and defense of the nation against air and space attack and to support other unified and specified commands. The broader responsibility for warning and defense of the US, Alaska, and Canada remained with the binational command NORAD. It took direction from both the JCS and the Chief of Canada's Defence Staff. Its functions were set down in a Terms of Reference (TOR) document agreed upon by Canada and the US. The latest edition of the TOR had been published in early 1975 and remained in effect through out 1979. Since by agreement the document was renegotiated every five years, a new one was due to be published in 1980. Asked by the JCS for its recommendations and comments on changes which should be considered during the upcoming renegotiation,⁵ NORAD listed the following in August 1979:⁶

1. Both governments should agree to the essentiality of CINCNORAD being "the prime advocate for North American air defense policy, doctrine, programming, and operations."
 2. Both should agree to cooperate to the fullest on space matters.
 3. Both should agree that properly cleared key Canadian personnel " . . . be granted full access to all classified information and directives deemed essential for the performance of the NORAD mission-- material that would normally be available to CINCNORAD for the execution of his full range of responsibilities."
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Change of Command

On 1 December 1979 General James E. Hill, already Commander in Chief of NORAD, of the specified command ADCOM, and of the major USAF command ADCOM, took command of the new Aerospace Defense Center upon its designation and activation.⁸ General Hill served in those several capacities for all but two days of 1979. On 24 August he announced his retirement effective 31 December.⁹

A successor was not immediately named, but speculation that he would be an officer of lower rank than past NORAD commanders* was confirmed when, in September, the US notified Canada, through diplomatic channels, that the Air Force intended reducing the position to a three-star billet. A congressional mandate to reduce one Air Force four-star position in FY 78 had prompted the action, but the US emphasized that "... in no way should this authorized grade change be perceived or viewed as a lessening of the importance attached to the aerospace defense mission area or in the capability of the United States to support its North American air defense responsibilities."¹⁰ The Canadian Deputy Commander in Chief, NORAD, Lieutenant General K. E. Lewis, reported to the ADCOM staff that he had expressed his personal dissatisfaction with the downgrading to Ottawa, but it seemed his government had been reassured that the US was now no less committed to a strong continental air defense.¹¹ The Conservative Party, which came to power in late 1979, viewed the matter no differently.¹² On 21 December, the Air Force announced Lieutenant General James V. Hartinger, commander of TAC's Twelfth Air Force, would succeed General Hill.¹³ On 28 December General Hill turned over his command to Lieutenant General Hartinger in a ceremony at Peterson AFB and retired, ending a distinguished 37 year military career.^{**14}

* Since the formation of NORAD in 1957 its commander had always been a USAF four-star general.

** General Hill remained in Colorado Springs, and on 3 January 1980 was named executive vice president and manager of the city's Chamber of Commerce.

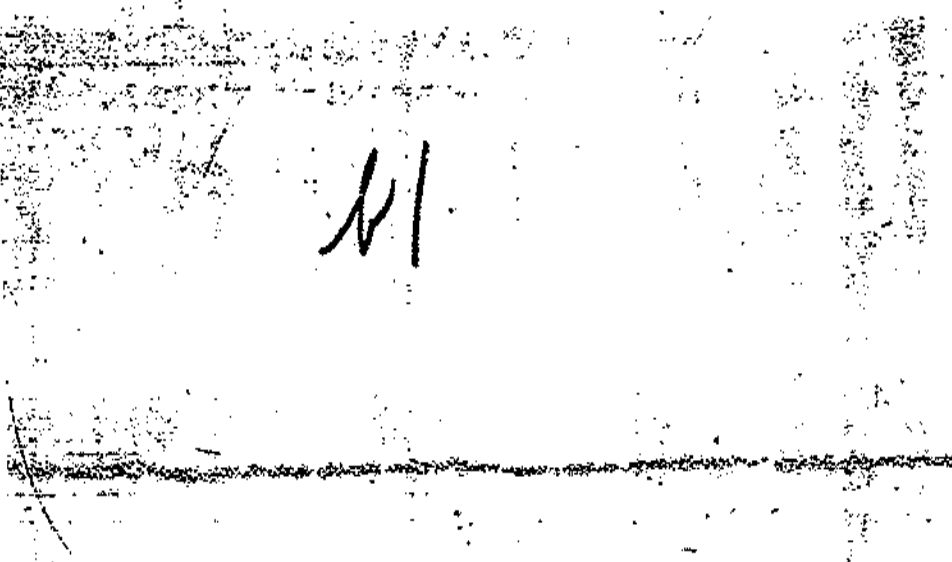
Organizing Aerospace Defense for the Eighties and Beyond

The Reorganization

The air defense system protecting North America was built in the 1950s and early 1960s principally for protection against Soviet bomber attack. The decade 1965-75 brought a shift in the threat away from bombers and in favor of ballistic missiles. This development, coupled with a U.S. policy decision not to deploy a ballistic missile defense system, resulted in decreased emphasis on the damage limitation missions of the North American air defense system, reductions in its size, and delays in its modernization. Several Air Force studies examined the organizational ramifications of that change and recommended the major Air Force command headquarters associated with the mission be dissolved and the assets it managed distributed among several other major commands. But although the Air Force continued to reduce the amount of money and manpower it devoted to the aerospace defense mission, it did not take the final step. Congressional criticism, however, in late 1976 and early 1977 of costly redundancies in management of the aerospace defense mission converged with Air Force Chief of Staff General David Jones' own determination to achieve greater savings and his interest in making organizational changes which would strengthen SAC's bid for the future space mission. In early 1977, at General Jones' request, a special Air Staff study group prepared a "Proposal For: A Reorganization of USAF Air Defense and Surveillance/Warning Resources." General Daniel James, Jr., CINCNORAD, offered an alternative for making substantial reductions in headquarters manning while retaining the existing organizational structure, but without success. The final draft of the study emerged in January 1978. Nicknamed the "Greenbook", it became the blueprint for disestablishing ADCOM.¹⁵ With General James' retirement in December 1977, and the assignment of General James E. Hill as CINCNORAD/ADCOM, the command's efforts concentrated on implementing the Greenbook. General Hill believed it essential that CINCNORAD/CINCAD continue to have clear end-to-end control of essential warning systems and be the primary spokesman for improvements to existing systems and for the acquisition of new ones. It followed, in his opinion, that the residual Air Force management headquarters in Colorado Springs should be the focal point for planning and the prioritization of aerospace defense programs in the Air

Force budgetary process.

Consultation with Foreign Governments. (S-Dec1-84)
Secretary of Defense approval of the reorganization plan was contingent on the satisfactory completion of consultations with the foreign governments concerned (Canada, Australia, Denmark, Turkey, Great Britain, New Zealand, Italy, Korea, and Iceland). It was expected such discussions would be little more than perfunctory in nature and that approval would come quickly.¹⁶



Since its officers were thoroughly integrated into the NORAD structure, Canada had been aware all along of the Air Force's intentions to reorganize ADCOM. Canadian Defence Minister Barney Danson had no particular objection to the proposal when it was presented him in December 1978, but he said a final Canadian position would not be taken until the Department of National Defence (NDHQ) had completed its examination. Department of National Defence (NDHQ) concerns, expressed to the US air attache in a 22 December meeting, were no different in substance than those which had been raised about a year and one-half earlier by Canadian officers at NORAD headquarters. (These had centered on the effect the reorganization would have on CINCNORAD's control of his resources, and the apparent greater linkage which would be created between Canada and SAC.)

As was characteristic of relations between US and Canadian officials, reorganization discussions were amiable, and the attache reported his answers had been well received. The Canadians, however, asked that documentation be provided for their examination.¹⁸ Washington sent additional USAF information with the instruction that consultations should be concluded as soon as possible. The US attache received assurances that NDHQ was staffing the proposal as rapidly as possible.¹⁹ Although the embassy had hoped to have Canadian approval by the end of January, late in the month came a request for further clarification.²⁰ Questions dealing with Canadian participation in the post-reorganization NORAD and the effect the change would have on binational agreements received lengthy US answers.²¹ On 15 February Admiral Falls wrote General David Jones, that they foresaw no problems resulting from the reorganization that would require an alteration of the existing NORAD agreement.²² In reply, General Jones underscored the primacy of CINCNORAD's advocacy role in strategic defense requirements.²³ With Canadian approval, the diplomatic consultation phase of the reorganization came to a close.

Initial Planning. Preliminary planning to carry out the reorganization had begun in late November 1978 following Secretary of Defense approval of the reorganization plan. Representatives from the commands concerned first met that same month.²⁴ A second conference convened in Colorado Springs 9-11 January 1979 to examine general implementation schedules and to discuss manpower documents and the preparation of programming plans. Preliminary unit manning documents of the three gaining commands were in accordance with manning levels projected in the Greenbook, but those for the residual headquarters to remain in Colorado Springs (then called Air Force Element, NORAD/ADCOM or AFENA) were not. ADCOM representatives argued the increase had come about as the result of new mission workloads imposed since April 1977 (the baseline manning date used in the Greenbook), but Air Staff representatives said the new total would have to be approved at Air Staff level. Air Force Military Personnel Center representatives said that after command unit manning documents had been approved at Air Force they would be examined at the Center, and if shortages existed "... equitable distribution of the available resources ..." would be made. Shortages were predicted.

The Space and Missile Warning System Operations Working Group, for example, reported to the larger group that significant differences existed between the number of personnel required in those specialities and the number currently available. A future meeting at Air Force Military Personnel Center would probably be necessary to work out details.*²⁵

The conferees agreed on a timetable for the next several months. The Air Force master programming plan was to be ready by 1 February. Concurrent with its preparation, ADCOM and the three gaining commands would complete their plans detailing major actions and time phasing to accomplish the reorganization and distribute them for coordination in early February. Final plans were to be sent to Air Force in early March.²⁶ These were all preparatory to public announcement on 15 March. Allowing for a period of 60 days for public comment, and barring complications arising from it, the reorganization was expected to get underway on 15 May. Transfer of assets to TAC and SAC would take place 1 July, and between 1 July and 1 October SAC would acquire space surveillance and missile warning assets.²⁷

The sooner public announcement was made the better because then the Air Force could take initial action on personnel affected by the reorganization. The date 15 March planned for in early 1979 was already two months later than the date originally projected. As mentioned, consultations with foreign governments were not completed until February. The first of March was then projected, but it too passed by, and further delay ensued when OSD decided to include the ADCOM closure as part of a more comprehensive listing of base closures and unit inactivations. Personnel planning was thereby adversely affected. Until the announcement no steps could be taken to freeze personnel in critical specialties and as time went on the resource of overseas returnees, which had been expected to help fill some command requirements, dried up as they were sent elsewhere.²⁸

Even as planning for the reorganization began in early 1979, Secretary of the Air Force Stetson asked the Air Staff to make a last zero-based examination of the action to determine if organizational and resource management objectives outlined in the Greenbook were still valid.²⁹

* The problem of equitable manning is discussed later in this chapter.

Some question remained that they were. Undersecretary of the Air Force Dr. Hans Mark wrote General Allen in the middle of February that while he had gone along with the reorganization "reluctantly" the previous summer when it was being reviewed within the Office of the Secretary of the Air Force, he had recently been inspired to raise the issue again. Mark agreed that when cutbacks pinched in it was more preferable to eliminate entirely organizations which were no longer productive than to make cuts across the board and thus penalize more viable organizations. He remained, however, "not comfortable" with that part of the reorganization which would place in one command assets for both strategic warning and retaliation. Operational control of warning systems was not really an issue, he said, since it remained with the specified command ADCOM and the binational command NORAD, but systems advocacy was. Technology for indications and warning systems required just as much push, in Dr. Mark's opinion, as did that for nuclear retaliation, and he feared that with the loss of management responsibility the residual headquarters in Colorado Springs would soon become unable to develop new technical requirements. If SAC acquired management of these systems, it would have the technical capability to manage them, but Dr. Mark found it hard to believe it would give them the same priority it would give to new offensive weapons such as the M-X. Mark said he would like to see an organizational separation of management as well as operational control of indications and warning systems; and he believed it would be worthwhile to look at another " . . . combination of the existing commands and services which could be worked out if ADCOM is abolished so that the separation of which I speak can be maintained."30

General Hill had a suggestion along those lines. He wrote General Allen in late February that should the Air Force believe it imperative to proceed with the reorganization, it could disestablish the major command, ADCOM, and assign its atmospheric defense assets to TAC, but not assign space and missile warning assets to SAC. He proposed these should be left where they were and used as the nucleus of a new command to which other space assets would eventually be assigned. General Hill questioned whether the reorganization should proceed at all. The question was not whether the reorganization could be made to work, but whether it would achieve its stated goals. The zero-based review being undertaken by the Air Staff should, according to the ADCOM commander, address the three objectives of the reorganization

as stated in the Greenbook: improved warfighting capability, reduction in management overhead, and reduction in manpower. General Hill concluded the reorganization would not in fact achieve those objectives: warfighting capabilities would not be enhanced, management overhead would be reduced but at the cost of established Air Force principles or organization and management, and the modest manpower savings realized did not seem to justify the major reorganization contemplated. General Hill pointed out that it was not too late for the Air Force to change its institutional mind, and he recommended to the Chief of Staff that the reorganization either not proceed at all or that it be oriented to the space organization suggested above.³¹

The zero-based review, conducted by a working group headed by Major General Daryle Tripp (AF/XOX), did not change the decision to reorganize. The results presented to Secretary Stetson on 26 February are summarized:³²

1. Manpower and cost avoidances (790 manpower spaces and \$13.8 million in annual recurring costs after the first year) could be realized.
2. The reorganization would not necessarily improve warfighting capabilities, but it would not degrade them either.
3. CINCNORAD/CINCAD would continue to have the same access for purposes of advocacy as then existed, and as commander of the USAF headquarters element he would continue to advocate USAF air defense and surveillance/warning operational doctrine and requirements to the Secretary of the Air Force, CSAF, and Hq USAF.
4. With regard to consideration then being given to future management of space systems, the reorganization did not " . . . necessarily preempt further considerations and eventual selection of a future management scheme for those resources."
5. Further clarification of the mission, specific functions, manning, and location of the new headquarters element in Colorado Springs was needed.
6. The basic recommendations of the January 1978 study should be adopted.

Secretary Stetson agreed the reorganization should continue and directed attention be given to fulfillment of paragraph five above. He also asked that a name other than Air Force Element NORAD/ADCOM be selected for the new headquarters.³³ General Allen transmitted these directions to General Hill.³⁴ The CINCNORAD replied in the middle of April that his staff had been working hard to develop manpower requirements and new mission and function statements for the new headquarters and to find a more suitable name for it. He recommended Aerospace Defense Center as a designation descriptive of the organization's mission. The "absolute minimum" number of spaces required was 1,573. Facilities requirements for the new headquarters were being studied by a SAC/ADCOM team, he said, and the results would be ready by the end of April. General Hill pledged ADCOM would try to make the transition work as smoothly as possible so as not to degrade the nation's defensive capability.³⁵

The focal point of ADCOM planning was the DCS/ Plans Reorganization Office, formed in mid-January 1979 and headed by Lieutenant Colonel Ron Demijohn.* A Reorganization Working Group, composed of representatives from all deputates and Special Staff Elements, provided staff support.³⁶ The Reorganization Office's first large order of business was preparation of a draft ADCOM Programming Plan (PPlan) 79-1, "Aerospace Defense Reorganization." The draft PPlan consisted of a basic plan and 20 annexes, which described assumptions regarding the course the reorganization would take, the residual responsibilities to be left CINCNORAD/ CINCAD/Air Force Element, NORAD/ADCOM, and individual staff actions to be taken and when they would be taken.³⁷ Ready by early February, the draft PPlan went to TAC, SAC, and AFCS for coordination. In return, ADCOM received for comment the draft plans of those commands. Coordination revealed disagreement over the specific functions of the command which would exercise operational control and those of the commands which would be responsible for day-to-day resource management.³⁸ Because of these and other differences, approval of the programming plans which went to Air Force in the middle of March was delayed. Headquarters USAF advised that 23 series regulations (Organization and Mission-Field) and

*. In early October 1979 Lt Col P. M. Fleming succeeded Lt Col Demijohn as the Reorganization Project Officer.

memorandums of agreement, and not programming plans, were the proper places wherein to solve them, and added, "Mission directives should clearly define PPBS (Planning, Programming, and Budgeting System) and operational requirements, advocacy responsibilities, and the inter-command relationships necessary to carry out these responsibilities."³⁹ New mission directives (drafts of a new AFR 23-9, Organization and Mission-Field, and of NORAD/ADCOM Regulation 20-4, Headquarters NORAD/ADCOM Organization and Functions) were also in preparation at that time. Coordination was continuing when the Air Force made public its reorganization proposal.

Public Response. On 29 March 1979 the Air Force plan to reorganize aerospace defense forces was announced as part of a long list of Defense Department base closures and realignments. Highlighted as savings from the ADCOM action were 790 civilian and military spaces and \$12.9 million annually in cost avoidance (one time costs the first year would be \$4.9 million). Actions to transfer ADCOM's resources to SAC, TAC, and AFCS, and then subsequently to dissolve the command, were to begin in the summer of 1979 and be completed over an 18-month period. In accordance with Title 10, United States Code, Section 2687, the Air Force said it would not take any irrevocable actions for 60 days, until 26 May, to allow for public review and comment.⁴⁰ Upon the announcement, General Hill sent a personal communication to his headquarters staff and field organizations explaining that Air Force efforts to streamline its activities did not mean its commitment to defense of the continent had weakened. CINCNORAD said while some people would lose their jobs and some would have to move to other locations, all possible would be done to minimize the effect of the change on everyone. He asked all to keep a positive attitude during the complicated undertaking ahead and to do their best to keep the defense of North America at a high level of effectiveness.⁴¹

Members of Colorado's Congressional delegation and Colorado Springs civic and business leaders appeared skeptical that the ends of national defense would be best served by the change, but they expressed no great concern for its economic implications. Representatives Ken Kramer (R-Colo) of Colorado Springs and Ray Kogovsek (D-Colo) of Pueblo, and Senators Gary Hart (D-Colo) and William Armstrong (R-Colo), stated they would attempt to get the decision reversed, but all admitted it would be difficult to do so. Business leaders

could foresee no long-term effect on the local economy from the reorganization. The influx of new firms over the past several years was steadily changing the character of the work force from one with a heavy military character to a civilian emphasis, a trend most believed was a good thing. The total military presence was not expected to change significantly since the Army expected to continue to maintain substantial forces at Fort Carson.⁴² The housing market, a critical barometer of economic vitality in the area, was strong.⁴³ Economic statistics issued by the Pikes Peak Area Council in early April showed continued business vitality, a condition which suggested that even the limited impact projected by the Air Force environmental assessment would not in fact occur, because the assessment had used two-year old statistics.*⁴⁴

Local examination of the Air Force proposal began when members of the Colorado Congressional delegation announced, on 11 April, establishment of an ADCOM Task Force. The 13-member committee, representing a broad spectrum of Colorado Springs' political, business, labor, religious, and military communities, would solicit public reactions, analyze the decision and its impact on the area, and report its findings to Colorado Congressmen for their use in Congressional hearings set for late April and early May. Since an important Task Force goal was "to succeed in getting the Air Force to justify its proposals to the people in this area who will be affected by the cutback," a public meeting with Air Force officials was arranged for 20 April.⁴⁵

An estimated 200 people gathered in Centennial Hall that Friday afternoon. Lieutenant General A. C. Greenleaf, DCS/Programs and Evaluation, Headquarters USAF, the principal Air Force spokesman, was assisted by a team of military and civilian experts from the Air Staff and Office of the Secretary of the Air Force. General Greenleaf spoke of the ADCOM decision as one in a continuum of management actions which had been going on for as long as the Air Force had been in being, but which had received particular attention during the past five years. Personnel costs were going up even as total personnel resources were dwindling. The Air

* The Air Force Environmental Impact Assessment (EIA) will be discussed at greater length later in this chapter.

Military Uses of Space: 1946-1991

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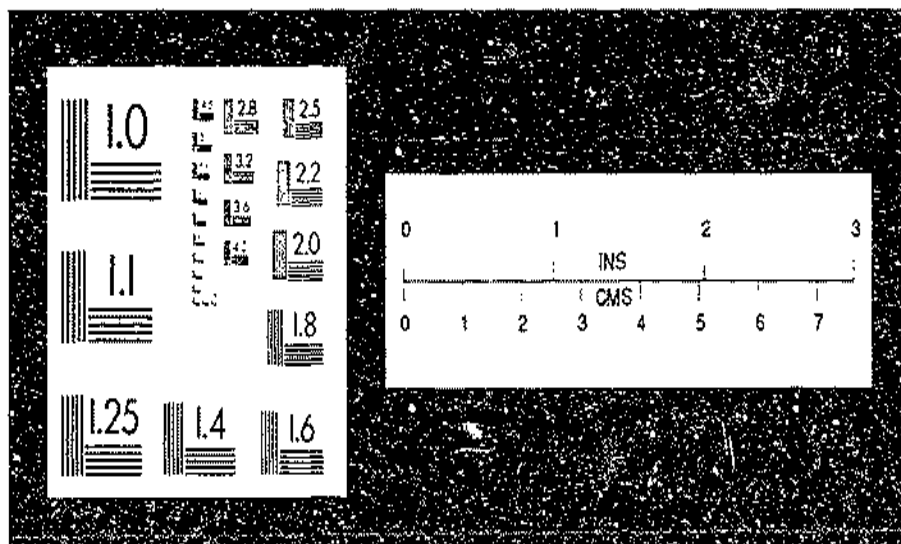
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Force was attempting to continue to meet its obligations by reducing supervisory overhead in management headquarters and using the authorizations saved to fill requirements in combatant elements. In the particular case of ADCOM, however, General Greenleaf said the impetus came from Congress, specifically from the House and Senate Appropriations Subcommittees, whose concerns about possible costly duplication of functions between ADCOM, SAC, and TAC were voiced in hearings in the winter of 1976-77 and eventually included in a House report of Jun 1977. The Air Force had responded by examining its options for accomplishing the mission by a redistribution of aerospace defense elements to several other commands, and had decided it was feasible to do so. The action, General Greenleaf explained, did not mean the Air Force had decided to pay less attention to aerospace defense: several recently approved and planned enhancements of the network would maintain an effective system with a fraction of the manpower presently required. He also emphasized that the change would have no effect on CINCNORAD's overall operational control of North American air defense. Closing out his remarks, the Air Force DCS/Programs and Evaluation detailed the changes which the Air Force would make under the proposal and the timetable for same.⁴⁶

The greater part of the three and one-half hour meeting was taken up with questions raised by members of the Task Force and from the floor (predominately from retired officers), and responses from General Greenleaf and his colleagues, on two broad issues: the economic effect of the reorganization on Colorado Springs and the general effect of the change on the defense posture of the nation. Local business and civic leaders expressed general dissatisfaction with the Air Force's Environmental Impact Assessment because it lacked enough specific detail to enable them to prepare plans (principally budgetary in nature) which would mitigate the socio-economic effects of the action. Colorado Springs Mayor Robert Issac seemed to sum up those concerns:⁴⁷

I certainly didn't want to infer that . . . we in any way want to interfere with economy and government at any level . . . We just want to know through the proper procedures through the Air Force . . . that we will be able to predict the effect because . . . a minor and short term effect . . . can be major . . . when we have to balance our budget . . . at the local level . . .

we would like to know what the impact is going to be and we think the work should be done and we should be provided with information that we don't know and that's how many are going to move out when.

The Air Force replied that the impact on the area, one known to be experiencing rapid growth, had been compared with the effect of like actions on other communities which had in the past experienced the same situation, and the conclusion was the effect would be minimal. Since its planning was not complete, the Air Force could not yet provide complete information on specific numbers and types of jobs which would be affected. General Greenleaf and Mr. James F. Boatright, Acting Principal Deputy Assistant Secretary of the Air Force for Installations, expressed confidence that the Air Force had complied with the National Environmental Policy Act. They were reluctant to go into detail, however, about methodology, for fear of prejudicing the Air Force's case in a law suit which had been filed just two days before the public meeting.*48

On the broader issue of the reorganization's effect on national defense, several former senior air defense commanders and key NORAD staff officers, all retired, expressed dissatisfaction with the trend in defense spending which had reduced air defense manpower and systems capability over the last decade, and questioned the wisdom of breaking up the organization and dispersing the special expertise which existed in ADCOM headquarters to other commands. Doubt was expressed about the continued effectiveness and timeliness of decision-making under such circumstances.⁴⁹

General Greenleaf expressed faith in the ability of the Air Force to be innovative in the face of adversity. He said:⁵⁰

I have enough confidence in this Air Force of ours . . . that we have demonstrated over the years marvelous resiliency in changing our minds and are now doing things we thought unimportant

* The law suit is discussed later in this chapter.

at the time or highly undesirable to do. We are running out of, if we have not already run out of, miracles if we continue to face reduction in resources provided to the Air Force . . . , and still do hopefully and effectively the missions that have been assigned to the Air Force.

He said that after careful study the Air Force had determined that it no longer needed a management headquarters devoted to air defense matters. The gaining commands were expected to give close attention to those portions of the mission they inherited. They would perform the day-to-day management tasks, but CINCNORAD's operational control remained inviolate. Air Force interest in the aerospace defense mission remained high--witness the new JSS system, AWACS, and improvements in missile warning radars--and the change would only eliminate headquarters overhead. Greenleaf said the Air Force was certain no weaknesses in its posture would result, and the savings to be realized by the action were substantial.⁵¹

Colorado Congressmen Ray Kogovsek and Ken Kramer provided closing comments to the public meeting. ~~Kogovsek~~ expressed concern about the potential economic effect the reorganization would have on Colorado Springs, but his larger concern was for the implications it had for the national defense posture. He personally felt the proposal was a mistake, and he intended to do all he could to get the issue examined in upcoming House Armed Services Committee hearings, but he rated as slim his chances of changing things. Representative Kramer added that although the general mood of the Congress was to "cut back" on defense spending, it would have to be convinced that the change would not jeopardize national defense. Both saw the hearings on military construction and base closures coming in late April and early May as perhaps the only opportunity to alter the course of the reorganization.⁵²

The Colorado Springs town meeting anticipated what the experience of the next several months would prove: no local organized opposition to the closure of ADCOM existed. The meeting was the high point of Colorado Springs' interest in the closure. No other such gathering was held for the purpose of fact-finding or to register opposition. After a brief revival of interest during litigation brought by ADCOM employees to stop the action, straight news coverage became infrequent and there was no editorial comment.

Colorado Congressmen were prepared to take the reorganization question to the floor of the Congress. It will be recalled that the ADCOM Task Force had been organized to assist them by providing information needed for interrogation of Air Force witnesses in upcoming Senate and House hearings. The Task Force examined the savings in dollars and manpower, the economic impact on the local area, and effect on the national defense posture. Its report, forwarded 24 April, was framed as a series of questions the answers to which might more fully illuminate Air Force intentions with regard to aerospace defense as a whole and ADCOM in particular.⁵³ If any change were to be made, it would happen during the legislative process and hinge on whether or not the Congress could be convinced to withhold funds for the action.

The ADCOM reorganization was brought to the attention of the Congress during late April and early May 1979 in hearings before the Subcommittee on Appropriations and the Military Construction and Stockpiles Subcommittee of the Senate Armed Services Committee. Representative Ken Kramer, freshman Congressman from the Fifth District, appearing as a witness before the House subcommittee on 25 April, voiced his conviction that air defense would be hurt by the decision to abolish ADCOM. He said he had consequently introduced a "Resolution of Disapproval" which had been referred to the House Armed Services Committee. Kramer said he had been criticized for his stand because of his commitment to reduction in federal spending and the fact that ADCOM was located in his district. Anticipating this reaction, he said he had studied the proposal carefully; and while his commitment to a balanced budget remained strong, he gave defense first priority in the use of funds. Borrowing from the findings of the ADCOM Task Force, Kramer discussed the present state of the nation's air defense posture, concerns about the change expressed by retired past commanders and staff officers of NORAD, the prospects for maintaining a credible posture following the reorganization, the international implications of the action, the validity of the cost savings advertised by the Air Force, and the effect the dissolution of ADCOM would have on the upcoming Air Force decision regarding space organization. In summation, the Colorado Congressmen called the proposal "ill-designed, ill-timed, and [reflective of] a misguided sense of priorities." At the conclusion of Kramer's statement the Subcommittee Chairman, Gunn McKay (D-Utah) thanked him, but noted that the committee did not have the authority to approve or disapprove base closures; the hearings were informative in nature and concerned with contruc-

tion requirements arising out of military realignments. A list of questions submitted by Kramer were sent to the Air Force and the answers subsequently placed in the record of the hearings. The three members of the subcommittee present raised no questions.⁵⁴

In addition to his efforts before the McKay Subcommittee, Representative Kramer also requested the General Accounting Office examine the adequacy and accuracy of the cost savings the Air Force said would result from the reorganization. The results of the inquiry, presented to Kramer's staff in the middle of May and in a report of 25 June, found little to dispute in the Air Force figures for annual recurring savings (the Air Force said \$12.7M and the GAO estimated \$12.8M); but the GAO noted Air Force estimates of one-time costs (\$4.9M) might be from \$1.9M to \$9.3M low, depending upon what the Air Force finally did with regard to facility enhancements at Peterson AFB, Offutt AFB, and Langley AFB. The GAO said the Air Force projected spending only \$500,000 on minor construction, but facility costs could rise to as much as \$9.8M if the Air Force decided to improve facilities at Langley and Offutt AFBs to accommodate personnel incoming as a result of the reorganization (\$2.4M), and build a new headquarters at Peterson for the remaining ADCOM personnel vacating the Chidlaw Building (\$7.4M). The GAO acknowledged that while its report was being prepared the Air Force had informed it that existing Peterson AFB facilities could accommodate remaining personnel, and the new headquarters building would not be built.* In summary, the GAO review generally substantiated Air Force figures with regard to savings which would result from the reorganization, pointing out only that if the Air Force chose to proceed with the enhancements which had been surveyed the one-time cost would be much higher than projected.⁵⁵

Unlike Representative Kramer, Senator Gary Hart, in his inquiry during Senate hearings in early May, took no stand against the disestablishment of ADCOM per se, but viewed it as the inevitable consequence of past piecemeal planning which raised doubts about the adequacy and character of future air and space defense forces. His view all along had been that the Air Force would have to prove that the reorganization was

* The issue of bedding down ADC on Peterson will be discussed later in this chapter.

economically and militarily sound, and to this end he had supported the investigative efforts of the Colorado Springs Task Force; but he had been pessimistic that the decision could be reversed in the Congress and had even urged realistic acceptance of the action.⁵⁶ "We can't reverse the decision just because we don't like it," he told a Colorado Springs audience in April.⁵⁷ Hart's questioning of Air Force officials during hearings of his Subcommittee on Military Construction and Stockpiles (Armed Services Committee) on 1 and 16 May, was based on issues raised in the Task Force Report, and brought assurances that the savings were real and the change meant no fundamental shift in U.S. air defense policy.⁵⁸ Still, the Senator believed a review of future air and space defense requirements was needed, and he had inserted in the FY-80 military construction bill a request for same. The DOD would report back to the Congress during consideration of the 1981 budget in January 1980.⁵⁹ As for concerns about the economic effect on Colorado Springs of losing ADCOM, Hart was hopeful it could be offset, at least in part, by the location there of a new facility associated with the Air Force's growing space mission. From his position as chairman of the Military Construction Subcommittee he worked to achieve that end. On 20 December the Air Force announced it intended locating a \$110 million Consolidated Space Operations Center (CSOC) 10 miles east of Colorado Springs. Construction would begin in 1982 and the facility was expected to become operational in the mid-1980s. Ultimately, the CSOC would employ about 1,800 military, civilian federal, and contractor personnel.* The promise of this new installation associated with the Air Force's burgeoning space mission seemed to sweep away whatever concerns still lingered about the economic consequences of the earlier closure; and it, not the demise of ADCOM, became one of the top 10 news stories of 1979 as compiled by the Colorado Springs Gazette Telegraph.⁶⁰

The Air Force had anticipated correctly that because of the generally good economic climate of the Colorado Springs area there would be no public effort to block the dissolution of ADCOM. Lacking encouragement from their constituents, and sensitive to the prevailing mood of the Congress to reduce federal spending, members of the Colorado delegation could do little more than register their concern over the possible effect the change would have on the national defense

* See discussion of CSOC, pp 111-115.

posture. Accomplishment of Air Force plans was delayed, however, by 10 ADCOM civilian employees, who, in April 1979, brought suit against the government charging the Air Force had failed to comply completely with national environmental policy.

EIA and the Law's Delay. (U) The National Environmental Policy Act (NEPA) of 1969* stipulated that any government agency proposing a major action which would significantly affect the quality of the human environment was required to prepare a detailed statement of the environmental impact expected to result from the proposed action. The Defense Department regulation intended as a guide to action in such matters stated that "In making a judgment in a particular case, it will be necessary for the proponent of the action to assess the expected environmental effects of the action in conjunction with the intent of . . . NEPA . . .", and it directed that a decision not be made until the environmental consequences had been assessed. Should the investigation show the action would have an environmental effect on a large scale "or have a serious environmental effect in a more restricted geographical area . . .", then it was to be considered a major action affecting the quality of the human environment and would require preparation of a comprehensive Environmental Impact Statement (EIS).⁶¹

In its efforts to comply with NEPA, Headquarters USAF assigned the task of assessing the environmental impact of the ADCOM reorganization to the USAF Engineering Services Center, Tyndall AFB, Florida. Its analysis, published in April 1978, focused on Colorado Springs (including El Paso and Teller counties), which would lose 1,649 military and civilian service authorizations, and Tyndall AFB, Florida, which would gain 215. Other increases--to Offutt AFB, Nebraska (190); Langley AFB, Virginia (166); and Scott AFB, Illinois (26)--were expected to have so little human and natural environmental impact that it was decided a full examination was not required. The Environmental Impact Assessment (EIA) anticipated the following adverse environmental effects in the Colorado Springs area from the reorganization:⁶²

* Pub L. 91-190, Jan 1, 1979, 83 Stat. 852, classified to section 4321 et seq. of Title 42. The Public Health and Welfare.

1. The proposed action would affect 8,583 persons (military, civilian, and their dependents), most of whom would move from the Colorado Springs Standard Metropolitan Statistical Area (SMSA).^{*} This was about 2.7 percent of the total SMSA population, estimated at 340,000.
2. Unemployment in the Colorado Springs SMSA would increase by 1.6 percent, from an average of 5.7 percent (period Oct 76-Sep 77) to 7.3 percent.
3. There would be a loss in personal income in the Colorado Springs SMSA of about \$35 million.
4. El Paso County revenues could decrease by an estimated \$1.7 million.
5. Air Force procurement would probably be reduced by about \$1 million.
6. The housing vacancy rate would rise from about 5 percent to 7.7 percent, at least in the short term.
7. About 1,540 students would leave local schools, resulting in a reduction in federal funding of about 8.4 percent (PL 81-874 funds).

Savings to the Air Force from the action would be \$14.8 million in the first year of implementation (\$17.6 million minus \$2.8 million one-time costs for transferring personnel), and \$17.6 million each year thereafter. Most of it represented personnel costs.⁶⁵

^{*} The SMSA included the city of specified population which constituted the central city and the county or counties in which it was located. The SMSA also included contiguous counties when the economic and social relationships between the central and contiguous counties met specified criteria of metropolitan character and integration.

After reviewing the assessment, the Chairman of the USAF Environmental Protection Committee concluded " . . . this proposed action will not have a significant effect on the quality of the human environment and it is not likely to be highly controversial with regard to its environmental impacts."⁶⁴ He determined that the provisions of the NEPA had been satisfied and a formal EIS was not required.⁶⁵ Although the Air Force subsequently made changes in the number of people to be moved from the Colorado Springs area (a reduction of about 300) and in the number to be located at each gaining base (those originally intended for Tyndall AFB would be located at Langley AFB), they were not believed to be of sufficient consequence to alter the conclusion that no further examination of the environmental consequences of the action was required.⁶⁶ In summary, the Air Force concluded that since the Colorado Springs area economy was dynamic in its growth, the impact of the reorganization would be minimal in its effect and short-lived in duration.

In February 1979 ADCOM advised USAF that a recent review of the assessment was sufficient " . . . to raise doubts as to whether the document could stand the test of detailed public scrutiny." ADCOM anticipated such an examination when the reorganization finally became public, and said it was not in a position to defend the environmental aspects of the decision.⁶⁷ Air Force was willing to assume that burden, and replied that although " . . . the nature of the proposed action . . . " forbid involving ADCOM personnel in the preparation of the assessment, "The current document is the final product of " . . . [an] extensive review and coordination process at Hq USAF, . . . " and would stand up under scrutiny.⁶⁸ A month later the Air Force's decision was challenged in a court of law.

The inadequacies of the EIA were the basis for a class action suit (Willett et al v. Brown et al) brought by 10 ADCOM civilian employees and filed in the District Court of Colorado in Denver on 18 April 1979.* The suit held that

* Plaintiffs were Richard N. Willett, Rosella M. Tellers, Louis R. Taylor, Linda C. MacClendon, Owen A. Moore, Archie H. Alexander, James E. Thebert, Edward C. Haning, Barry A. Hinton, and Phillip Montoya. As was customary in such cases, named as defendants were Secretary of Defense Harold Brown, Secretary of the Air Force John Stetson, and Air Force Chief of Staff General Lew Allen.

in its planning the Air Force had failed to comply completely with provisions of the NEPA. In summary, the plaintiffs claimed: (1) The Air Force had violated 10 United States Code, Section 2687 by not making prior public announcement that ADCOM was a candidate for closure, (2) It had substantially departed from general policies and procedures of the NEPA in the proposed action, (3) It had violated DOD and USAF regulations pertaining to the NEPA, and (4) It had failed to conduct the environmental and technological assessment necessary for preparation of an adequate and detailed environmental impact statement, and had refused to prepare such a statement. The plaintiffs asked for an injunction to freeze all reorganization actions until the government had complied with the requirements of 10 U.S.C. Sec. 2687 and other applicable statutes and regulations.⁶⁹ Richard Hanes, lawyer for the defendants,* called the suit a "delaying tactic" to force the government to prepare a lengthy EIS. Time would be gained for Colorado members of Congress to explore the issue more fully in committee hearings. If enough support were forthcoming, perhaps the defense appropriations bill could be written to forbid use of funds to disestablish ADCOM.⁷⁰ The government responded to the suit by denying most of the allegations, calling some of the plaintiffs' references to statutes incomplete and inaccurate and others conclusions of law a response to which was unnecessary. It asked that the suit be dismissed.⁷¹

On 23 May, six days before the sixty day moratorium on Air Force actions was to expire, U.S. District Judge Sherman G. Finesilver heard arguments by both sides. He then denied the Air Force's motion to dismiss the plaintiffs' suit and its request for summary judgment, and ruled in favor of the plaintiffs by granting a temporary injunction against the Air Force proceeding with any irrevocable action in conjunction with the reorganization.

* The Colorado Springs firm of Spurgeon, Haney, and Howbert represented the plaintiffs.

Judge Finesilver's 14-page summation examined the defendant's argument that since its assessment had found no adverse effects on the natural environment in the Colorado Springs area, and only short-lived socio-economic effects, and since the action was not a major one affecting the quality of the human environment as defined in DOD regulations, it was not necessary to prepare a lengthy EIS. The court held the Air Force's contention that an EIS was not necessary was not a reasonable one. The judge highlighted two deficiencies in the assessment process which led to that opinion. First, the supplemental assessment conducted by Mr. Thomas Lord, Chief of Environmental Planning Division, Hq TAC, pursuant to a change in Air Force plans and its intention to send some 400 personnel to Langley AFB, Virginia instead of Tyndall AFB, Florida, had been oral and informal. Judge Finesilver ruled this was not a reasonable exercise of discretion in a formal assessment. Secondly, the assessment did not address the effect on the environment of the construction of the building which the Air Force said would be required to house about 600 personnel sent to Peterson AFB upon closure of the Chidlaw Building. This also was not a reasonable exercise of discretion, according to Judge Finesilver. The judge also disagreed with the Air Force's emphasis in its testimony on natural or biophysical effects at the expense of socio-economic ones, saying the latter concerns were so "entwined" with natural environmental ones as to give them considerable weight. Neither could he agree with the view expressed by the Air Force that the NEPA " . . . is for the enlightenment of the decision-makers" (Finesilver's words). He said the general public (to include the plaintiffs) was entitled to the most complete information possible, and, according to the judge, this might best be obtained by "a formal and complete written assessment" * The judge said that for a preliminary injunction to be ruled the plaintiffs merely needed to show reasonable probability that they would ultimately prevail, and they had done so. In issuing his temporary injunction the judge determined " . . . the threatened harm to plaintiffs far outweighs the actual harm which will accrue to defendants if the injunction is granted." He also denied

* As for broad public policy considerations behind NEPA, the judge said many biophysical, natural, and human components must be examined and alternatives and their effect considered, and this required broad rather than narrow compliance with the Act's tenants, and compliance with the spirit of the Act " . . . even when possibly not technically required, . . . "

the defendant's claim that the plaintiffs' suit should be dismissed since closure of a military facility was not involved (as defined in 10 U.S.C. S 2687). He called such arguments "spurious," since the Chidlaw Building was clearly military in purpose and under the control and direction of the Department of Defense.⁷² At this late May hearing a trial date was set for 22 June, but then subsequently postponed indefinitely at the Air Force's request to give it ample time to respond to questions raised by the court. A status conference would be held in Judge Finsilver's court 18 July, and a new trial date set then.⁷³

On 18 July the Air Force again motioned the court either to dismiss the case or to issue a summary judgment based on a revised environmental assessment which it presented at that time. The Air Force stated it had made every effort to be responsive to Judge Finesilver's concerns expressed in the 23 May Memorandum of Opinion. The judge had raised doubts about the documentation and completeness of the environmental assessment, so the Air Force had prepared a new, more comprehensive, one. The earlier assessment had not addressed the impact of the Air Force's planned new building for headquarters personnel at Peterson AFB, to which the Air Force presented an affidavit that it did not intend to build such a facility. To the court's concern about " . . . emphasis placed by defendants on the effects on the natural or biophysical environment at the expense of the socio-economic environment," the Air Force referred to its new assessment which had corrected that imbalance. In answer to the court's ruling that NEPA should be considered for the enlightenment of the general public as well as the decision-makers, the Air Force replied the assessment would be made available to those affected by the ADCOM reorganization and a wide-range of other interested parties. Those actions taken, the Air Force thought the original issues raised by the plaintiffs were now "moot," and, as mentioned above, it urged dismissal of the plaintiff's action. Judge Finesilver thereupon gave the plaintiffs until 1 August to respond to the Air Force's motion. The government would then have about a week to rebut.⁷⁴

The plaintiffs replied their complaint was not now moot just because the Air Force had amended its EIA, since " . . . it [the complaint] is not limited to only the initial EIA but addressed the totality of the actions taken by the

Defendants as showing their noncompliance with the statutory requirements; and the Amended EIA is not conclusive as a matter of law on all issues of the Plaintiffs' complaint; and there still remain substantial material issues of fact which require a trial on the merits."⁷⁵ The plaintiffs claimed that the motion to dismiss was not appropriate. They pleaded the motion for Summary Judgment was to determine whether or not there was any genuine issue as to material facts; and the court was not permitted to decide any issues of facts upon a motion for Summary Judgment, but must solely determine whether there was an issue of fact to be tried. Just because the defendants addressed all of the issues in the amended EIA was not a test of whether or not Summary Judgment should be granted. To the defendant's claim that the amended EIA had remedied the inadequacies of the original assessment, and that no material issue of fact remained to be determined, the plaintiffs replied there was a different conclusion to be drawn and that such issues must be decided at trial and not upon a motion for judgment. The plaintiffs maintained that all they were required to do under a Motion for Summary Judgment was to show there was material issues of fact which required a trial. The balance of their brief examined the factual issues remaining to be decided: sewage problems, school overcrowding, and noise pollution at Langley AFB; failure of the amended EIA to consider fully mitigation of known adverse environmental effects of the reorganization; erroneous information contained in the amended EIA on the impact of the reduction of the Colorado Springs school system; and the questionable accuracy of the cost estimates of altering Peterson AFB to accommodate Aerospace Defense Center personnel. The plaintiffs concluded denial of defendant's Motion of Dismiss and Motion for Summary Judgment was appropriate.⁷⁶

Despite these arguments, Air Force attorneys remained convinced the amended assessment answered the plaintiffs brief. The assessment examined the plaintiffs' arguments one by one and found no material issues of fact to prevent the court from a judgment in favor of the defendants. The government concluded:⁷⁷

There are no issues of material fact remaining, only differences of opinions. The sole issue remaining is to determine whether the Air Force was reasonable in arriving at its negative determination. It has been shown by the facts that have been uncontraverted by the plaintiffs that the determination was based upon a thorough

analysis indepth factual research, and clear reasoning. The amended environmental impact assessment did render plaintiffs' complaint moot and did address all deficiencies and supplied the necessary decision making documents to enable this Court to adjudge the reasonableness of the negative determination. Therefore, it is requested motion to dismiss or in the alternative for Summary Judgment be granted.

Judge Finesilver set 24 August as the trial date to hear arguments on the case.⁷⁸ As that date neared, however, there were reports the plaintiffs were finding it increasingly difficult to pay their legal fees. On 20 August one of their spokesmen denied the suit would be dropped,⁷⁹ but next day came an announcement that the parties had filed a joint motion for dismissal of the suit, and that Judge Finesilver had signed it, thereby lifting the preliminary injunction issued 23 May.⁸⁰ A trial on the merits of the case never occurred because the plaintiffs were already about \$15,000 in debt and could not raise the additional funds needed.⁸¹

The suit Willett v. Brown delayed Air Force implementation of the reorganization for about three months (23 May until 21 August). Personnel transfers which normally would have taken place during the traditional summer moving season were delayed by the injunction, and morale problems, if not personal hardship, resulted. The delay also permitted some highly skilled and scarce personnel resources intended for SAC, TAC, and the new Aerospace Defense Center to be lost to other assignments. It was perhaps natural that the frustration of this hiatus, coming on top of the moral draining experience of two years of reorganization study, caused some to focus blame on the 10 civilians who brought the suit. But the Air Force should bear a share of that responsibility. In assessing the environmental aspects of the proposed action, it had available for reference the experience of past reorganizations and base closures (for example, the long-delayed move of AFCS from Richards-Gebaur AFB to Scott AFB), events which although different in many particulars from the action contemplated, nevertheless collectively urged caution and a conservative approach to meeting the requirements of national environmental policy. ADCOM might have performed a useful role, perhaps as the "devil's advocate," in constructing the strongest possible assessment. As it turned out, the command was not given an opportunity to help prepare the document, but individuals employed there were encouraged by the weaknesses they found in it to challenge the action in

court. The court agreed the Air Force assessment was incomplete enough to justify postponement of the reorganization, but a trial test never came because the plaintiffs dropped their suit when they could no longer pay their legal fees. Neither side gained much satisfaction from this brief legal excursion. The plaintiffs incurred considerable debt but delayed the reorganization only three months. The injunction's delay did not help Colorado Congressmen in their efforts to explore the consequences of the closure of ADCOM in FY-80 budget hearings, since the issue received only superficial examination there, and all that was going to be said on the matter had been said by early May. The Air Force had to expend additional effort to rewrite its assessment, and the effect of delays in personnel transfers and organizational changes has been mentioned. The prevailing opinion of Headquarters ADCOM's military and civilian personnel regarding the law suit, whether they sympathized with the action or not, seemed to be that it could not cancel out the reorganization, only postpone it. During the injunction period they became increasingly anxious for an end to the stalemate so that they could make the necessary adjustments in their lives and get on with the future. Few greeted with disappointment the USAF announcement on 23 August that on 1 September the ADCOM reorganization would begin.⁸²

Dismantlement of the Major Air Command ADCOM. (U) Upon public announcement of the reorganization, Air Force planning concentrated on four principal actions necessary to accomplish the change: (1) transfer to TAC, AFCS; and SAC parts of ADCOM's mission, personnel resources, systems, units, and bases; (2) establishment of a new management headquarters called Aerospace Defense Center from residual ADCOM headquarters personnel; (3) disestablishment of the major air command ADCOM; and (4) vacating the Chidlaw Building and movement of the new ADC headquarters to Peterson AFB.

The first action was to transfer the larger part of ADCOM's manpower and units to TAC and AFCS. TAC would acquire 16,657 manpower spaces, 10 major units, and four bases. The Communications Service would gain 1,696 spaces, two units, and the communications-electronics functions of many other former ADCOM units the greater part of which would go to TAC and SAC.⁸³ The TAC DCS Plans wrote the ADCOM Vice Commander in early May that General Creech (the TAC commander) wished to accomplish

the change in a "smooth, orderly, and efficient" way. Consequently, TAC expected to make no major changes in the manner in which business was being done, and would try to minimize any personal hardship which might arise as a result of the reorganization. TAC's plan for assuming its new responsibilities included establishing a small cadre of personnel in Colorado Springs in June. It would be headed by Major General John L. Piotrowski, then commander of the 552d Airborne Warning and Control Wing, Tinker AFB. He would assume the title of TAC Deputy Commander for Air Defense (ADTAC). Between October 1979 and June 1980 TAC would gradually transition responsibility for the air defense mission from Colorado Springs to Langley by incremental movement of personnel and their integration into the TAC staff.⁸⁴ ADCOM welcomed this means of transitioning responsibility for the atmospheric defense mission,⁸⁵ but it had trouble with the split dates of the transfer. In late May General Hill attempted to get TAC and AFCS to agree to postpone their parts of the change-over until 1 October, the date of the SAC transfer. He reasoned that since personnel shortages existed in certain critical AFSCs, if the quantity of personnel requested by TAC and AFCS were transferred on 1 July, not enough would be left over to support SAC's requirements on 1 October and the continuing needs of CINCNORAD. If all transfers took place 1 October, a more orderly transition would be possible, and the Military Personnel Center would have more time to reallocate personnel from its worldwide pool.⁸⁶ TAC answered it saw no reason to delay things since personnel allocations could be managed. It was concerned that any later date would drag out the transfer and result in more personnel turbulence.⁸⁷ AFCS noted the referenced personnel problems had little effect on its plans, and said it could support either date.⁸⁸ Since ADCOM found itself unsupported on the change of dates, 1 July remained a valid planning date into early June. An advance party of TAC personnel arrived at ADCOM on 4 June to set up the ADTAC office, but it had to depart again late in the month when court delays extended the moratorium on actions into July.⁸⁹

In late July, reorganization action officers met with Hq USAF planners in the Pentagon to examine a range of reorganization issues. New milestones agreed upon called for assets going to TAC and AFCS to be transferred on

26 Air Division, less the
 2 Communications Sq
 5 Defense Space Communications Sq
 7 Missile Warning Sq

46 Flying Training Sq Peterson AFB, CO

425 Munitions Support Sq Colorado Springs, CO

Bases

Duluth IAP, MN

Kingsley Field, OR

Hancock Field, NY

Tyndall AFB, FL

The Air Force's residual presence at Otis AFB, MA

Those units not transferred to TAC ("less the" etc. above) were missile warning and space surveillance organizations destined for assignment to SAC. Pending that action, they were, on 1 October, assigned temporarily to Headquarters ADCOM.⁹⁵

Also on 1 October, the Air Force Communications Service gained two ADCOM units, the 47 Communications Squadron and the 4754 Radar Evaluation Squadron (346 manpower spaces).⁹⁶

SAC also began its phased acquisition of ADCOM assets on 1 October by assuming command of Peterson AFB and the following units: Hq 46 Aerospace Defense Sq (less the 46 Flying Training Sq, the 504 Air Force Band, and the 47 Communications Sq), the 4602 Computer Services Sq, and the 4614 Contracting Sq.⁹⁷ In total, SAC was slated to receive 3,565 manpower spaces, 15 major missile warning and space surveillance units, and, in addition to Peterson, two bases in Greenland (Thule and Sondrestrom).⁹⁸

Planning for the transfer of resource management functions for ADCOM missile warning and space surveillance units to SAC had called for a gradual acceptance of responsibility by that command beyond the first quarter of FY-80, as personnel with the required skills were acquired. SAC acknowledged in early October, however, that its new Directorate of Space and Missile Warning Systems (SX), DCS/Operations, would be slow in building up because of shortages in critical AFSCs related to space. Also, having gained what it called "... some real world visibility into the transition problem," SAC agreed that ADCOM would no longer have sufficient personnel beyond 1 January 1980 to support a phased transition of SAC gained assets. SAC therefore proposed a complete transfer of remaining ADCOM management responsibilities on 1 December (with the exception of the 10th Aerospace Defense Squadron which it would take over on 1 November). Since SAC/SX would not be able to manage those responsibilities by that time, the liaison office in Colorado Springs would assume that function in the interim, being augmented by former ADCOM personnel eventually destined for assignment to Offutt and SX.⁹⁹ ADCOM agreed to the SAC proposal.¹⁰⁰

On 1 December the following units were reassigned to SAC:

Unit	Location
2 Comm Squadron	Buckley AGB, CO
5 Defense Space Comm Sq	Woomera ASN, Australia
6 Missile Warning Sq	Otis AFB, MA
7 Missile Warning Sq	Beale AFB, CA
12 Missile Warning Group	Thule AFB, Greenland
13 Missile Warning Sq	Clear MEW, Alaska
14 Missile Warning Sq	MacDill AFB, FL
16 Surveillance Sq	Shemya AFB, Alaska
20 Missile Warning Sq	Eglin AFB, FL
4684 Air Base Group	Sondrestrom AB, Greenland

SAC also gained at this time jurisdiction over Thule and Sondrestrom Air Bases in Greenland.

Upon transfer of responsibility for the day-to-day management of aerospace defense systems and the greater part of its units and personnel, ADCOM for all practical purposes ceased to function as a major command, although it continued to exist officially throughout the rest of 1979.

Formation of Aerospace Defense Center.

Although the "Greenbook" proposal of January 1978 determined a major command management headquarters was no longer necessary to support the aerospace defense mission, it did recommend a small staff of about 300 be retained in Colorado Springs to " . . . be the administrative and resource management organization for organizing, training, and equipping Air Force personnel supporting NORAD/ADCOM/Specified/ and NCOC functions . . . " Since, as the study emphasized, it was critical " . . . to preserve the authority and influence of CINCNORAD in the performance of his mission, to assure he is provided adequate, trained forces, and to maintain a responsive command and control structure downwards for the forces and upwards to the Canadian and U.S. military and political authorities,"¹⁰¹ it seemed the new management element would inherit many of the responsibilities of the old major command. Upon close examination of the proposal, however, the ADCOM staff was not completely satisfied CINCNORAD's authority and influence in joint and service matters would be preserved.¹⁰² The JCS saw some "ambiguities" in the study's distinctions between what would continue to be CINCNORAD responsibilities and what role CINCSAC would play with regard to command and management of space and missile warning resources. SAC was to get technical management of Automatic Data Processing resources, but NORAD would maintain configuration management control. The JCS asked: "How, for example, will sensor management be separated from ADP management? Within ADP, how will hardware and software be separated? Or, within software, how will technical management be separated from configuration management?"¹⁰³ These questions and other considerations persuaded the commands concerned to meet in Colorado Springs in early 1978 to review their plans for implementing the reorganization.¹⁰⁴ Subsequently, General Hill reported to the JCS that he was satisfied he could do the job.¹⁰⁵

The proposed reorganization plan does not diminish my combined/specified operational command authority as CINCNORAD/CINCAD . . .

. . . There is no change to my current authority and responsibilities for the NCOC, its operational centers and associated ADP hardware and software. At the sensor sites, NORAD/ADCOM would maintain configuration management over the operational software for the sensor systems. Technical management, [*] e.g., implementation of approved software changes and day-to-day maintenance of sensor software and hardware, would be provided by site personnel under the command of SAC. The NORAD/ADCOM staff would retain the management structure expertise and approval authority for changes to software programs and associated hardware specifications relating to sensor systems supporting the CINCNORAD/CINCAD operational mission. Operational control and tasking over all elements of field sensors needed to support the space surveillance and missile warning/attack assessment missions will continue to be exercised through the NCOC operational centers which remain under my full control. This retains the existing command and control structure through which I currently carry out my assigned combined and specified command responsibilities. This arrangement is essentially unchanged from the manner in which end-to-end operational control of ADP hardware and software is currently managed.

In its presentations of the reorganization plan to the JCS and Office of the Secretary of Defense, the Air Force emphasized the action represented only a change in the way the Air Force would manage day-to-day the resources it contributed to the aerospace defense mission. CINCNORAD's

* Defined as the user stating requirements, evaluation test plans and results, and maintaining overall cognizance of configuration control actions to include software documentation standards.

authority, influence, and control would be preserved. In late November 1978, when Air Staff representatives and those of the commands concerned met to re-examine the reorganization study, and to begin planning to implement its proposals, program advocacy was described as resolved as the result of a general officer agreement. Yet, within the month, differences which arose between the SAC and ADCOM staffs over future management of ADP software gave ample evidence it had not been.¹⁰⁶ At the Second Combined Air Defense Reorganization Planning Conference held in early January 1979, the two commands remained at odds over advocacy. ADCOM found unacceptable the wording of a SAC draft letter of agreement which defined configuration management and technical management, and would not agree to transfer to SAC certain ADCOM Plans and Operations functions.¹⁰⁷

As work began in February 1979 on programming plans to implement the reorganization, the future role CINCNOAD/CINCAD/COM AFENA would play in stating requirements and otherwise advocating his mission needs to Hq USAF remained the major issue between ADCOM and SAC and TAC. General Hill provided the following as policy for a Plans staff paper on the subject: "... AFENA (CINCNOAD/CINCAD) is primary (possibly even sole) advocate. Requirements, configuration control (end-to-end), inspection and evaluation, training standards, etc. remain. SAC and TAC are supporting and supporting only."¹⁰⁸ The CINCNOAD wrote General Allen that it seemed the relationships between the future resource managers of aerospace systems and the operator of those systems were still not well understood. He referred to a recent attempt to explain the workings of the post-reorganization NORAD/CINCAD/AFENA to the Canadians,* as one producing "enduring confusion." The explanation therein of future parallel systems advocacy, wherein SAC, TAC, AFCS and ADC would share advocacy responsibility but CINCNOAD would continue to be the principal advocate for strategic aerospace defense requirements, seemed ambiguous at best. General Hill re-

* General Hill was referring to a State Department message to the American Embassy, Ottawa, 20/2143Z Dec 78 (Doc 71, Chap I, Hist of ADCOM, 1977-78).

marked, " . . . we apparently are having to create awkward, poorly understood mechanisms and relationships . . . " to make the reorganization work. Pessimistically, he predicted this uncertainty could result in the SAC and TAC staffs dominating the relatively small AFENA staff and eventually rendering it ineffective. The consequence would be the eventual disestablishment of NORAD.¹⁰⁹

DCS/Plans direction to the staff for use in preparing the programming plan reflected CINCNORAD's strong belief that his headquarters should be the focal point for the Planning, Programming, and Budgeting System (PPBS) actions (e.g., development of doctrine and concepts, mission area analysis, Program Objective Memorandum (POM) actions, building force documents, and long range planning) as they concerned the strategic defense area.¹¹⁰ Consequently, the March 1979 draft of ADCOM PPlan 79-1 contained a detailed discussion of CINCNORAD's future advocacy responsibilities and interaction with those commands responsible for resource management.¹¹¹ Since in some particulars this policy conflicted with SAC and TAC perceptions as to what their future responsibilities would be, coordination of PPlans was delayed. SAC said its main disagreement with the ADCOM plan was that although SAC would be assigned the resources and major command responsibility for them, the plan indicated AFENA would retain them. This would mean a duplication, it said, of both management functions and personnel requirements.¹¹² ADCOM replied that since CINCNORAD/CINCAD would continue to have operational responsibility for aerospace defense forces in the post reorganization period, AFENA would develop requirements and work with SAC, TAC, and AFCS to expand upon and complete such documents as Statements of Operational Need (SON) and Required Operational Capability Statements (ROCS).¹¹³ Headquarters USAF took note of these conflicts and advised that the 23 series regulations (Organization and Mission - Field) and memorandums of agreement, and not the Programming Plans, were the proper places to resolve them. Specifically, "Mission directives should clearly define PPBS/Planning, Programming, and Budgeting System/and operational requirements advocacy responsibilities and the inter-command relationships necessary to carry out these responsibilities."¹¹⁴

Advocacy emerged as a "key consideration" in a zero-based review directed by the Secretary of the Air Force in February 1979 to verify the validity of the reorganization's objectives. The Air Staff examined the division of responsibilities for PPBS and the advocacy for future systems requirements and concluded no change would be made in CINCNORAD/CINCAD's access for advocacy purposes. Also, as the commander of the Air Force element in Colorado Springs, CINCNORAD/CINCAD would continue to advocate USAF air defense and surveillance/warning operational doctrine and requirements to the Secretary of the Air Force and the Chief of Staff. Furthermore: "This proposed headquarters element would remain responsible for Air Force planning, programming and budgeting actions affecting USAF resources dedicated to CINCNORAD/CINCAD in the Colorado Springs area and for control over space surveillance/missile warning ADP configuration management." SAC, TAC, and AFCS would work closely with the element " . . . to provide parallel systems advocacy through PPBS actions associated with their specific resource management responsibilities."¹¹⁵

The zero-based review did not, however, quiet disagreement over AFENA's role in future dealings with the Air Staff on matters of mission area analysis, acquisition, and general PPBS activities. ADCOM learned in late March that SAC and TAC had advised the Air Staff that ADCOM's advocacy responsibilities, as outlined in its PPlan and its draft of the 20-4 regulation (headquarters organization and responsibilities) were overstated and contrary to Greenbook guidance.¹¹⁶ Anxious that his position be clear, General Hill wrote General Allen about this problem, which he had thought previously resolved, saying that although future strategic defense matters would require continuing and close coordination between the operator and systems managers, AFENA should be the one primary focal point for future systems advocacy to the Air Staff.¹¹⁷ The SAC commander, General Ellis, also wrote General Allen at this time, but with a different view. He saw a much more limited role for the AFENA staff than the one envisioned by General Hill. While he agreed that a " . . . clear definition of this division of responsibilities [between AFENA and SAC, TAC, and AFCS] was fundamental to smooth and efficient reorganization," and toward that end it was important to note that CINCAD as a specified commander had the obligation to advocate his requirements through the JCS to the SecDef, the CINCSAC also observed that since the major command ADCOM was to be disestablished it became the responsibility of SAC,

TAC, and AFCS commanders to process CINCAD requirements through Air Force channels. Such an arrangement would, according to General Ellis, parallel the USAFE/PACAF/TAC relationship wherein TAC represented the theater combat commands in program advocacy within the Air Staff.¹¹⁸ NORAD felt compelled to comment to USAF on the Ellis letter in order " . . . to add clarity to the determination of post-reorganization responsibilities . . ." The Vice Commander in Chief, Major General Warren C. Moore, noted that specified commanders had been successful in the past because they had been at the same time major air commanders and thus resource managers. They had therefore been able to promote their programs to Headquarters USAF, the prime mover in the allocation of resources. (The JCS had little impact on this process, and traditionally specified CINCs had preferred to work through service channels.) He said there was no precedent for believing it was desirable to have a resource manager who was not at the same time the specified commander process the specified commander's requirements through the Air Staff. Although CINCAD would cease to be a major air commander after the reorganization, he would command a service headquarters element; and it was his belief that while the relationship between the force suppliers (SAC and TAC) and the force employer (ADCOM-specified) should be a "close and interdependent partnership," responsibility to determine and advocate operational requirements to the service headquarters should be delegated to the headquarters element supporting CINCAD.¹¹⁹

General Allen responded to these concerns by saying the Air Staff had been instructed to examine all aspects of the assignment of responsibilities for air defense and surveillance/warning resources, including the important question of advocacy, and an intercommand meeting would be held later " . . . to insure full agreement and understanding regarding organizational responsibilities."¹²⁰ That review was not completed until early June, however, and previous decisions regarding overall division of responsibilities were confirmed. The Vice Chief of Staff provided additional guidance on 9 July:¹²¹

- a. Aerospace Defense Center (ADC) (formerly AFENA), will be an Air Force unit with its commander (COMADC) reporting directly to CSAF. The ADC mission will be to provide Air Force staff support

to NORAD/ADCOM and to serve as the coordinating authority for integrating Air Force activities in the strategic aerospace defense mission area.

b. The Air Force is fully committed to support the CINCAD/CINCNOAD mission. In this context, we must insure that the operational commander continues to have influence in resource allocation decisions. This can be done by establishing a very close relationship between CINCAD/COMADC and each of the supporting commands (TAC, SAC, and AFCS). This will require that TAC, SAC, and AFCS headquarters activity regarding strategic defense be closely linked with that of ADCOM/ADC. Although there will be no changes to the current operational chain of command for real-time actions, we see TAC, SAC, and AFCS headquarters being advised of CINCAD operational actions which affect subordinate units in a way that facilitates accomplishment of the operational mission. Being so informed will allow the commanders of TAC, SAC, and AFCS to provide enhanced support.

c. Provisions must be written into the 20/25 AF regulations to insure that CINCAD/COMADC can initiate requirements statements, and recommend priorities for programs for use by the commanders of SAC, TAC, and AFCS as the bases for resource management actions in the PPBS /Planning, Programming, and Budgeting System/ and in development and acquisition of new systems. Establishing formal authority for CINCAD/COMADC to review PPBS actions proposed by SAC, TAC, and AFCS will insure that he continues to have a voice in such matters.

To further clarify this guidance, Hq USAF called a meeting for 25 July at the Pentagon. An Air Staff briefing set down in some detail CSAF decisions regarding future missions, authorities, responsibilities, and inter-organizational relationships of the several commands.¹²² As mentioned earlier, PPlans and regulations were reworked accordingly and prepared for final publication.

Advocacy responsibility translated into manpower requirements. A strong advocacy role for CINCNOAD/CINCAD/Commander ADC presupposed a residual management headquarters

of sufficient size and with the requisite staff expertise to support his mission. The acquisition of new responsibilities for day-to-day management of aerospace defense systems also encouraged the gaining commands to seek the best possible manning situation, both in numbers and in specific skills, in the post-reorganization period. Few difficulties were anticipated in redistributing the bulk of ADCOM's manpower assets in the field. Individuals would remain in place and merely change their patch on transfer day. Management headquarters manpower requirements presented greater difficulty since new unit manning documents had to be constructed. The plan was for headquarters staff specialists--military and civilian--to accompany functions transferred to the gaining commands. They would be assigned temporarily to liaison offices (in the cases of SAC and TAC) in anticipation of eventually moving to Langley and Offutt AFBs. The greater part of these transfers, although they would bring some personal hardship to individuals, were negotiated between the commands concerned without a great deal of difficulty. The reallocation of some specialized and chronically undermanned skills (e.g., pilots, navigators, space systems, computer systems, and weapons controllers) was more contentious, since ADCOM's resources were not sufficient to fulfill both the continuing requirements of the ADC headquarters and the new requirements of SAC, TAC, and AFCS.

To begin the redistribution process, each command prepared a unit manning document based on requirements generated by new mission responsibilities. ADCOM constructed one for ADC, and upon receiving like documents from SAC, TAC, and AFCS, it made tentative selections for transfer of personnel to those commands and identified surplus personnel (reorganization "savings"). The ADCOM staff's reaction upon examining these documents was that their requirements exceeded ADCOM's resources.¹²³ The Air Force Military Personnel Center (AFMPC) found from preliminary work with major command documents that shortages would probably exist in some officer career fields.¹²⁴ In a meeting called by MPC in the middle of May, Manpower and Personnel representatives from the several commands confirmed several problems handicapped completion of manpower documents: shortages of personnel (increased authorizations in some already undermanned AFSCs); equitable distribution of personnel, or, more specifically, the equitable distribution of shortages; future ADC manning (the size of the new headquarters and whether or not it should be manned on a priority basis had not been determined); and the conflict over assignment of individuals (in some cases all four commands wanted the same individual).¹²⁵ Command rep-

representatives had trouble with AFMPC's announced policy of equitable distribution of existing resources (largely ADCOM's) in terms of numbers, expertise, and quality. They viewed it as an unrealistic course which could impact unfavorably on mission accomplishment. AFMPC said that in the absence of Hq USAF priority manning guidance, it could only proceed on the basis of equibilty, and its tentative manning plan had been built on that premise.¹²⁶ When briefed on the meeting, General Hill also seemed to have doubts about how workable the share-alike plan would be. He reminded his staff that the reorganization had been sold on the basis of specific manpower savings. Those spaces remaining after the cut were to be used to man the new ADC headquarters and to satisfy new requirements of the gaining commands. Those requirements should not exceed the spaces available. He wanted ADC to gain the best manning situation possible so as to insure no degradation of the mission. The CINC observed that if it came about that the requirements of the gaining commands exceeded the number of spaces made available in the Greenbook, the difference would have to be filled from other resources.¹²⁷ This guidance was followed in ADCOM's response to AFMPC's manning plan: The command did not concur in those actions it believed would adversely affect mission accomplishment. It also believed that the new headquarters should begin its operations from the most favorable manning situation possible, since it would no longer be able to draw upon expertise in field units.¹²⁸

The January 1978 Greenbook established the total Air Force manpower authorizations for the residual headquarters, the Air Defense Combat Operations Staff (ADCOS) in Cheyenne Mountain, and several operating locations and detachments at 1,572 spaces. The Air Staff subsequently agreed to add 53 more in consideration of new workloads added since the study was published, bringing the total to 1,625.¹²⁹ ADCOM's analysis of future needs indicated a minimum requirement for 1,677 spaces (to man the new management headquarters, the Cheyenne Mountain Complex, and the 425 Munitions Maintenance Squadron).¹³⁰ This left a difference of 52 spaces between what Air Force had approved and what ADCOM wanted. Subsequently, ADCOM adjusted its requirement downward, to 1,573, when it was decided the 425 MUNSS (104 spaces) would be transferred to TAC.¹³¹ An early February 1979 request to USAF for an additional 52 spaces brought the CSAF's reply that CINCNORAD should examine the 1,521 spaces then provided with a view toward decreasing that number, since Air Force man-

power requirements for the new headquarters seemed to be "somewhat overstated."¹³² General Hill later reported that ADCOM had looked at several ways to restructure the new headquarters to save manpower, but it had always come up several spaces short of the 1,573 ceiling.¹³³ He remained convinced any lower manning would impact adversely on vital functions and responsibilities. Air Force, however, refused to budge from the 1,521 figure.¹³⁴ Out of appeals, ADCOM had no recourse but to reduce the new headquarters. Notices went out to the staff on 24 July that the spaces had been removed from the Aerospace Defense Center UDL.¹³⁵

The issue of ADC manning settled, at the 25-27 July meeting at Hq USAF, the commands were told to review and revalidate their requirements and send them to USAF by the middle of August, so that by early September the USAF validation could be in the hands of AFMPC. Command representatives were told that Air Staff functional managers would henceforth prioritize critical AFSCs and arbitrate on the distribution of ADCOM's personnel assets if requirements shortfalls arose.¹³⁶ General Hill thought it was not the business of Air Staff functional managers to decide what he as a specified and binational commander needed to fulfill his operational mission.¹³⁷ Subsequent efforts by the Air Staff only increased his concern and inspired a message to the Vice Chief of Staff about the process of realigning requirements without due consideration of operational requirements and the involvement of commands responsible for carrying out the reorganization. General Hill believed ADCOM and not the Air Staff should serve as the "honest broker" for the allocation of limited critical skills, because CINCAD's concern was for the operational mission, and he could be expected to do his best to insure SAC, TAC, and AFCS were effectively manned to carry out their aerospace defense management functions.¹³⁸ While the idea of CINCAD as "honest broker" did not catch on, he was assured the "... reorganization of ADCOM assets will be accomplished with no mission degradation." The Vice Chief of Staff called a 17 September meeting at Headquarters USAF (instead of AFMPC) in which it was hoped the manning issues could finally be settled so as not to delay other reorganization actions.¹³⁹ Headquarters USAF direction to AFMPC prior to the meeting was that in the critical pilot (14XX), navigator (22XX), weapons controller (17XX), and space systems (20XX) fields equitable manning would be made first using ADCOM resources, and then MPC should try to in-

crease the manning percentage using other resources to bring it up to 80 percent if possible.¹⁴⁰ The meeting was successful, and the AFMPC project officer subsequently reported a distribution process had been agreed upon by all, to include the matching of people to spaces.¹⁴¹

Henceforth the aerospace defense mission area would be the responsibility of CINCNORAD/CINCAD/COMADC, as the operator, and COMTAC, COMSAC, and COMAFCS as resource managers. Organization and mission regulations for the four, put into final form in the late July Pentagon meeting, were still at the printers at the end of the year, but nevertheless were in force unofficially when on 1 October and 1 December transfers of responsibilities took place. AFR 25-9, "Organization and Mission - Field, Aerospace Defense Center (ADC)," described the responsibilities of the new headquarters, its support of the binational NORAD and joint CINCAD missions, and its relationships with the three commands exercising resource management. CINCNORAD/CINCAD continued to exercise operational control over all U.S. and Canadian forces assigned. As the overall advocate for the strategic defense mission of the JCS, he would identify overall mission area needs. His command authority would enter SAC, TAC, and AFCS units at the field headquarters and unit level; he would have no command authority over COMTAC, COMSAC, or COMAFCS. CINCNORAD/CINCAD would participate in the development and acquisition of his command and control system, and direct its operation. He would also receive from resource managers information on significant changes in logistical support and basing alignment which he would use to express his views and have them considered before a final decision was made. The Center supporting CINCNORAD/CINCAD would be a direct reporting unit to CSAF and serve as the Air Force field with coordinating authority for the integration of Air Force activities in the strategic aerospace mission area. It would have the authority to require consultation between the resource managers, but not to compel agreement. CSAF retained this prerogative. COMADC would translate CINCAD's mission area needs into program requirements and transmit them to the resource managers for inclusion in the PPBS cycle. COMADC would review resource manager recommendations when they bore on the budget, and he had direct access to CSAF should he believe ADC priorities were being neglected.

The reorganization plan called for the new headquarters to be moved from the Chidlaw Building to Peterson AFB.

The lease on the downtown building would not be renewed, and the Air Force would thereby save about a million dollars a year in rent. Plans to accomplish the move were prepared by the end of 1979, but funding problems (the substantial difference between ADC's estimate of what it needed for minor repair and rehabilitation at Peterson and the amount the Air Force would provide) threatened to delay the move beyond the summer of 1980 goal.

Until the middle 1970s aerospace defense headquarters functions in the Colorado Springs area were located on Ent AFB and in the Chidlaw Building, a leased facility. Beginning in FY-71, and for 10 years thereafter, ADC, and later ADCOM, submitted in the Military Construction Program (MCP) a requirement for a new headquarters building at Peterson AFB. It planned to consolidate there scattered staff elements and then close its expensive downtown installations. The command asked for a building to house about 2,000 people, but the price of \$22 million caused it to be dropped perennially from the MCP. By the end of 1976 ADCOM had closed Ent AFB and distributed those disposed throughout the Chidlaw Building, Peterson AFB, and the Cheyenne Mountain complex. Now more than ever, ADCOM looked to a new building at Peterson as the solution of its future needs. General Daniel James, Jr. submitted a requirement for a new NORAD/ADCOM building in the FY-79 MCP as his number one priority. It would cost \$11.8 million and house 1,400 persons.¹⁴²

Headquarters USAF was also anxious that ADCOM consolidate its activities at Peterson, but within existing facilities. It was unlikely, Air Force said, that the new headquarters project would be approved in the near future. One "promising approach" suggested to solve the problem of rising construction and rental costs was to vacate the Chidlaw and Federal Buildings and move people into space made available in Cheyenne Mountain and on Peterson by "compressing" functions already there. Also, facilities not being used as administrative space could be easily and economically converted to such use.¹⁴³ General James replied that the feasibility of such a recommendation had been studied repeatedly for several years, but the answer always came out the same: The move was not practical unless a new headquarters building was constructed.¹⁴⁴ In July 1976 General James counted for General Jones the cost of ADCOM remaining downtown past 1982: \$180,000 a

year for rent of the Federal Building, \$150,000 for transportation, and \$2 million rent for the Chidlaw Building. He said a new building could be amortized in six years based on elimination of those costs.¹⁴⁵

The new headquarters remained ADCOM's number one priority in construction in the FY-79 MCP, although further refinement of the command's needs--based on a continued decline in manpower--reduced the requirement to a 1,000-man building costing about \$10 million. General James noted that if the structure could be built with FY-79 funds, it would be available early 1981, two years before the lease on the Chidlaw Building had to be renewed, and the rent of \$1 million could be saved.¹⁴⁶ But once again the building dropped out of the budget. In early December 1978, one month prior to completion of the final draft air defense reorganization plan, ADCOM updated its headquarters building requirement with a request in the FY-81 MCP for a 176,000 square foot building for 1,000 people costing \$11.4 million.¹⁴⁷ The Greenbook, however, postulated a sizeable reduction in both ADCOM headquarters personnel and spaces at Peterson AFB supporting the MAJCOM, and the movement of key intelligence and operations personnel into Cheyenne Mountain. It said the Chidlaw Building could be vacated and the residual staff relocated to buildings at Peterson AFB "with minimum turbulence and no significant facility renovations."¹⁴⁸

Responding to CSAF's call for surveys at the several bases affected by the reorganization, and in order to determine what needed to be done in the way of facility modification or new construction,¹⁴⁹ ADCOM examined several options involving new construction and relocation and renovation of existing buildings at Peterson AFB. If a move into existing facilities became necessary, Building 1470, housing Headquarters, 46 Aerospace Defense Wing, was the only suitable facility for the new management headquarters.¹⁵⁰ But this and other options involving renovation were costly temporary expedients. Also, it would be uneconomical to negotiate a new lease for the Chidlaw Building. Only the new headquarters option offered the potential for savings over the long term.¹⁵¹ In late April, ADCOM modified its FY-81

* The report also stated that bases gaining personnel in the reorganization (at the time Tyndall, Offutt, Langley, and Scott) would be able to absorb them within existing facilities and total costs for minor renovation would not exceed \$500,000.

request for a new building at Peterson, reducing it in scope to a seven million dollar, 100,000 square foot structure, to house 600 people.¹⁵²

Such plans ran counter to the Air Force's determination that announced savings from the reorganization remain valid. ADCOM therefore found no support for a new building at the Air Staff level.¹⁵³ A survey of Peterson facilities by an Air Staff team on 1-3 June affirmed that although some minor construction and building maintenance and repair work would be needed to locate the residual ADCOM staff in the wing headquarters building, that facility was suitable and no new building was needed.¹⁵⁴ The GAO, however, kept the issue alive for awhile longer when it issued a report on 25 June which stated the Air Force was considering a half dozen options for bedding down personnel at Peterson, Offutt, and Langley AFBs, and the cost could be as much as \$9.8 million.*¹⁵⁵ The Air Force denied it planned a new headquarters building at Peterson,¹⁵⁶ and an affidavit to that effect was submitted by the Air Force Director of Engineering and Services in the civil suit Willett v. Brown, then in litigation.¹⁵⁷

With the new building now a dead issue, ADCOM began planning in earnest to move the approximately 600 personnel which would make up the new ADC headquarters into Building 1470 on Peterson AFB and to relocate the displaced wing to Building 385.¹⁵⁸ Tentative space allocations for ADC staff agencies were made and project documents for minor construction (P-341) and maintenance prepared. When it had surveyed Peterson in early June, the Air Staff team had estimated such work would cost about \$500,000 (this was also the limit on the expenditure of P-341 funds for which the Air Force had authority; projects costing more had to be authorized and funded by Congress). ADCOM's estimate of projects required at Peterson to beddown ADC, sent to USAF 15 October, were over twice that amount: \$1.36 million (\$983,000 in construction and \$382,000 in maintenance and repair).¹⁵⁹ General Hill thought some of the first year savings to be realized from the reorganization should be

* \$7.4 million for a new building at Peterson and relocation of the printing plant there from the Chidlaw Building, and \$2.4 million for improvements to existing buildings at Offutt and Langley AFBs.

reapplied to these projects, and he solicited the Chief of Staff's support to provide the additional funds.¹⁶⁰ The Air Force Vice Chief of Staff replied that the Air Force was "tied to the previously established position" that the cost of moving ADC headquarters to Peterson would be \$500,000, and that no new construction was required. He asked NORAD/ADCOM to reduce the project to \$500,000, doing only that work critical to moving the headquarters to Peterson. A future MCP project could then complete the renovation of building 1470.¹⁶¹ At the end of the year the ADC civil engineer was responding to this direction by scaling down facilities projects which would constitute a new package to be sent to Air Force early in 1980.¹⁶²

Summary. (U) By the end of 1979, 87 percent of all the actions required by the reorganization programming plan had been completed. Remaining to be done was official disestablishment of the major command ADCOM; completion of personnel transfers in the spring and summer of 1980; the move to TAC and SAC liaison offices back to Langley and Offutt AFBs; and the move of ADC headquarters to Peterson AFB. None of these seemed to present any problems, except perhaps the move to Peterson. It was complicated by funding restrictions on the rehabilitation of facilities at the base, and the possible relocation there by SAC, the base's new owner, of new missions which had not been considered in the reorganization plan. It would likely be at least 1981 before ADC could move to the base.

The Air Force decision to reorganize its aerospace defense forces culminated a decade of decline in continental air defense. Studies during the middle of the decade recommended disestablishment of the major command and the redistribution of its assets to other commands; but while cuts continued to be made, the basic ADCOM organizational structure remained intact until Congressional pressure in late 1977 and early 1978 caused the Air Force to accept as a mandate the closure of ADCOM. Air Force Chief of Staff David Jones directed the Air Staff Greenbook study which detailed how to accomplish the change. His successor, General Lew Allen, kept to the objective of completing the reorganization as it was set down in the Greenbook and explained to the Congress and the public. Both NORAD/ADCOM commanders during the reorganization era, Generals James and Hill, were unsuccessful with

proposals which would have altered the Air Force plan. NORAD/ADCOM (specified)/ADC, which retained operational control of forces, and SAC and TAC, who gained responsibility for resource management, differed on the division of authority for future systems advocacy to higher headquarters. In the end, Hq USAF mediated. The redistribution of ADCOM's manpower, especially those critical AFSCs in short supply, proved difficult, and all commands were forced to accept shortages for at least the immediate future.

The closure of ADCOM aroused no organized public opposition in Colorado Springs. Community leaders were confident the local economy was strong enough to accept the loss with little or no long term effect. The Colorado Congressional delegation examined the reorganization in several committee hearings early in 1979, but found no support among their colleagues for further examination or delay of the action. The Air Force argument that the change would save dollars without affecting performance fit well the general economy mood of the Congress. The only effective opposition came from 10 ADCOM civilian employees. They were successful in gaining a court injunction based on what they claimed were inadequacies in the Air Force's environmental assessment. This delayed action for three months, but since the plaintiffs ran out of money before a decisive legal confrontation could take place, the validity of their case was never tested. All major reorganization actions were taken during the last three months of 1979, and without discernible effect on the operational condition of the various aerospace defense systems.

For good or ill, aerospace defense had been reorganized. Even those who opposed this break with the traditional concept of organization established in 1946 with the formation of three CONUS combat commands (SAC, TAC, and ADC) seemed confident Air Force people would be flexible and adaptable enough to make the new organization work. It also presented an opportunity to enhance the aerospace defense mission area. CINCNORAD/CINCAD/Com ADC would now work closely with the commanders of two large and influential commands in the promotion of systems modernization at the service and joint levels. The new relationship

would call for close cooperation and interaction between the several staffs. If agreement on priorities could be achieved and sustained, the result might be an upturn in the funding fortunes of aerospace defense.

Space Mission Organization Planning Study

How the Air Force should organize itself to take on the increased responsibilities in space it expected to acquire during the decade of the 1980s and beyond had been studied with an increasing sense of urgency since at least 1974, and continued to be during 1979. A decision in August promised a sharper focus for research and development and mission operations in Air Force Systems Command, but it fell short of providing the means for centralized management of all Air Force responsibilities in space operations, a decision which ADCOM, for one, considered long overdue.¹⁶³

In September 1978 Secretary of the Air Force John Stetson observed that because of evolving relationships with NASA over management of the Space Shuttle, the Air Force would need a stronger organization devoted to space activities than it then possessed, and he asked the Air Force to consider future space organization options.¹⁶⁴ The Chief of Staff established an Air Staff Executive Committee composed of Air Staff officers and officers from major commands with present or predicted responsibilities in space to prepare a study to determine what action should be taken to respond to the Secretary's request.* The study, entitled "Space Mission Organization Planning Study" (SMOPS) was completed in January 1979. It offered a choice (it made no recommendation) between a functional arrangement, which would continue the present system of assigning responsibility for space systems on a case-by-case basis, and a centralized one, which would assign all assets to an existing command (SAC and AFSC) or place them under either a new Space Command or a Space Service (under AFSC). The Executive Committee also outlined the following Air Force objectives for space: The Air Force should be the DOD executive agent for space, it should have operational control of the Shuttle for missions involving national

* Major General B. K. Brown, DCS/O, represented ADCOM with staff support from Lt Col S. Beamer (XP) and Lt Col J. B. Wilde (DO).

security, it should acquire combat capabilities in space, and it should make the organizational changes needed to facilitate achieving operational objectives.¹⁶⁵

Upon examination of the study, ADCOM concluded it actually offered two SAC alternatives, two AFSC alternatives, and a Space Command alternative. If the ADCOM Reorganization was a reality (and study rules had considered it such), then continuation of the functional status quo (Alternative A) would be tantamount to SAC's acquisition of the mission, since it acquired ADCOM missile warning and space surveillance assets. Alternative B also assigned major space missions to SAC. Alternative C created a Space Command. Alternative D assigned operations and research and development to AFSC. Alternative E created a Space Service under AFSC.¹⁶⁶ ADCOM strongly favored creation of a Space Command. General Hill recommended to General Allen using ADCOM space and missile warning systems and personnel to create the new organization (thus only half the Reorganization would be accomplished), and building on that nucleus by adding other Air Force space assets over time as they became operational.¹⁶⁷ This recommendation was made prior to the Air Force's final zero-based evaluation of the ADCOM Reorganization, and, theoretically at least, while it was still negotiable. With the decision to proceed, however, and the March public announcement of the action, the ADCOM commander took a new position. He told General Allen that in a perfect world he would stick with the Space Command as the best answer, but since it was probably infeasible politically to form a new command so soon after getting rid of one, the best solution seemed to be a variant of the Space Service offered by Lieutenant General Thomas Stafford, DCS/Research and Development, Hq USAF. It would give the Service major command planning responsibilities and dual-hat the Vice CINCAD as its commander. This variant, General Hill said, provided " . . . a coherent organizational relationship between Service and specified command responsibilities."¹⁶⁸ Replies from other major commanders and senior Air Staff officers showed a diversity of opinion about what should be done and when, but they seemed generally agreed that whether space went to an existing organization or to one newly formed, stronger centralized management was needed.¹⁶⁹

Briefed on the alternatives for organizational change in early June, General Allen made no decision. Not

until early August did Secretary of the Air Force Dr. Hans Mark announce a decision to realign space and missile research, development, and test activities by deactivating, effective 1 October, AFSC's Space and Missile Systems Organization (SAMSO) and establishing two organizations--Ballistic Missile Office (BMO) and Space Division (SD) -- from its two former major subdivisions. The SD would continue space activities formerly the responsibility of SAMSO and add responsibilities for launch sites on the west and east coasts formerly operated by Space and Missile Test Center (SAMTEC), which would be deactivated. The Air Force said the change reflected the increased importance of its space activities and would streamline organization and improve efficiency.¹⁷⁰ Certainly it fulfilled the widely felt need to do something, but it also had the effect of shelving the Space Mission and Organization Planning Study. If in limbo, however, it was not dead. Secretary Mark still maintained development of a doctrine and organization for increased activity in space was one of the Air Force's three most important priorities.¹⁷¹ On the eve of his retirement from the Air Force, in December 1979, General Hill shared with General Allen his concerns about the future of the Air Force as it regarded the space mission, and concluded " . . . that unless we make an explicit organizational decision which assigns to a single organization the Air Force responsibilities in space operations once and for all, we will be faced with serious, negative, long term impacts on resource management and planning."¹⁷²

The Joint U.S.-Canadian Air Defense Study (JUSCADS)

The growing obsolescence of early warning systems protecting North America against bomber attack, the need to modernize them, and the expense of doing so were issues of increasing concern to the United States and Canada. Experience gained in the joint program for acquisition of Region Control Centers for the Joint Surveillance System (JSS), and the increasing austerity of defense budgets on both sides of the border, encouraged the two nations to look for more ways to share the financial responsibilities of modernization. In June 1976, representatives of the two nations, meeting as the Permanent Joint Board on Defense (PJBD), agreed to hold talks on how arrangements for cost sharing should be pursued. A Joint Steering Group was subsequently formed to examine common points of departure; and by early 1977 a package approach to system acquisition, in which each country would accept total management responsibility for specific joint systems as the basis for equitable division of national responsibilities,

had been agreed upon. Further discussion was then postponed pending completion by the U.S. of a study of the air breathing threat and consequential decisions by Secretary of Defense Brown (Amended Program Decision Memorandum). Thereafter, talks resumed, and at the June 1978 PJBD meeting the Canadian Steering Group Chairman reported a paper was nearing completion which proposed financial sharing for certain systems in Canada and Alaska.¹⁷³

To this point, cost sharing had focused on programs developed in large measure independently by the two nations, and had been concerned primarily with modernizing current equipment in existing locations. In a letter to U.S. Secretary of Defense Brown, on 10 May 1978, however, Canadian Minister of Defence Barnett J. Danson noted that by continuing in that direction "we run the risk of investing large amounts of money in rebuilding a North American air defence system essentially designed to meet the Soviet threat of the 1950s and early 1960s, and that part of it still in service." Danson urged a more in-depth study be undertaken of the potential air breathing threat to North America in the 1980s and beyond, and what advanced techniques might be available in that period to meet it.¹⁷⁴ Asked to comment on this proposal by General David Jones, Chairman of the JCS, General Hill concurred with Canada's premise that mutual defense requirements should be considered in a North American context, and he supported any action that would further that precept. If a study was determined to be the appropriate course, NORAD would lend its full support.¹⁷⁵ Secretary Brown replied to Danson on 29 June that the Air Defense Steering Group already in existence should determine if further studies were required. He emphasized, however, that if a joint effort were undertaken, it should be completed quickly so decisions could be incorporated into defense planning as soon as possible; and he said under no circumstances should the study unnecessarily delay joint consideration of problems relating to current systems and their near-term improvement.¹⁷⁶

The Steering Group met on 28 September and confirmed that a study was needed.¹⁷⁷ Subsequently, both the U.S. and Canada prepared draft Terms of Reference (TOR) for the study effort, and in early November these were used to prepare a joint document. In its final form, after coordination at NORAD, the TOR stated the purpose of the Joint U.S.-Canada Air Defense Study (JUSCADS) was: "To define options, in terms of cost and effectiveness, for a systems and programmatic plan that would meet North American air defense needs from the present through about the year 2000, and to identify potential

technological opportunities for joint U.S.-Canadian research and development."¹⁷⁸ Requirements for defense against both the bomber and cruise missile threat would be examined and considered in the context of North America. Two time periods--the present to about 1985 and 1985 to 2000--would be considered, and within each period the study would integrate systems and programs into various architectures for a North American air defense system. The study would be prepared by a joint U.S. group of specialists from System Planning Corporation (a U.S. "think tank" firm), other similarly oriented companies, and U.S. and Canadian governmental agencies. Mr. E. C. Aldridge, Vice President of System Planning Corporation, was named the study director, and Brig Gen (CF-Ret) J. J. Collins its associate director. An oversight Joint Working Group, co-chaired by Mr. George Bader (OSD/ISA) and Maj Gen (CF) Norman Trower, would follow the Study Group's efforts, provide direction, and periodically report progress to the Joint Steering Group. The Steering Group, co-chaired by Mr. James Siena, Deputy Assistant Secretary of Defense for ISA (European and NATO Affairs), and Mr. John Anderson, Assistant Deputy Minister (Policy), National Defence Headquarters, would provide management guidance and periodically review the study's progress to ensure it met the objectives set down in the TOR.¹⁷⁹ While NORAD concurred in the joint TOR, and was anxious to lend its expertise to the study in an advisory capacity,¹⁸⁰ it, like Secretary Brown, hoped there would be no delays in programs already approved. In a letter to Secretary Brown in mid-October, General Hill spoke of "ominous signs that there were those [unnamed] who would use the study as an excuse to delay or defer even the most modest modernization and improvements already approved or underway."¹⁸¹

The Study Group assembled in early 1979, and in the middle of February held its first full meeting, at NORAD, to complete a plan for the report.¹⁸² Progress reports presented at a meeting in Ottawa later that month indicated the study would make recommendations for minimum warning and defense capabilities and then examine successive increasing levels of capability to a maximum level. The schedule at this point called for a preliminary status report to be given the Steering Group in early April, the initial report would be sent out for review on 1 June, and the final report was to be delivered 3 July. USAF Air Staff officers attending the Ottawa meeting reportedly emphasized again the importance of no delays.¹⁸³ A study progress report presented by the directors to interested parties in the Pentagon, at NORAD, and in Ottawa, in early April, indicated that although a good beginning had been made, analysis of near term air defense enhancements

needed to be strengthened in order to provide a more sound transition to future space based systems. U.S. Working Group members who heard a preliminary report briefing on 4 April were concerned that not only was the idea of a leap-frog into space inconsistent with the study's TOR, but also insufficient consideration had been given to the effect such an approach would have on Canadian participation, since that nation had barely begun to formulate a national space policy. After hearing the preliminary report on 10 April,¹⁸⁴ General Hill wrote Lieutenant General Richard L. Lawson, Director of Plans and Policy (J-5), JCS, that he did not quarrel with the emphasis being given space systems, only to the timing: "Discounting that feature which had our action officers concerned--whether or not we should try to leap-frog to space-based radar--there is no doubt that the study will conclude in an emphatic way that space is where much of tomorrow's air defense job will have to be done when technology permits. It is not a question of if--only when."¹⁸⁵ Tentative conclusions reached by the Study Group, and briefed to NORAD, the Working Group, and the Steering Group in late May and June, were little different in substance from the preliminary results briefed in April. Options were presented for the near term to reduce operations and support costs of the existing system, and emphasis was placed on early initiation of research development testing and evaluation for space surveillance systems. Those briefed continued to be concerned about the technical and budgetary risks involved in moving into space too soon. They wanted more attention given to bridging options involving enhanced ground systems to make sure no air defense gap was created in the late years of the century before space based systems were operational.¹⁸⁶ The Canadian deputy CINCNORAD summed up NORAD's view: "While space based systems offer potential for the future, in our view they do not answer the threat we face in the 80s and 90s. More emphasis should be placed on how we can best meet our near and mid-term requirements. Therefore, we should plan for ground based systems to provide the long range tactical warning hedge between the threat of the 80s and 90s to the turn of the century while at the same time continuing an orderly R&D process towards bringing in a space based capability during the early part of the next century."¹⁸⁷

Given the circumstance that in June significant study issues remained unresolved, it became clear that the early July completion date for the final report could not be met. The Aldridge-Collins group requested, and was granted, a month's extension. This date proved also unrealistic, however, as the study went through three drafts (10 July, 15 August, and 25 September). The NORAD staff provided extensive comments on the drafts, which showed substantial

improvement after the first one was judged unacceptable.¹⁸⁸ General Hill wrote the co-chairmen of the Joint Steering Group in early October that he found the third and final draft report "an excellent starting point for modernizing the North American aerospace defense posture." It identified the limitations of existing systems, documented the need for incremental improvement, and provided various alternatives for resolution of air defense problems through the remaining two decades of the century. Although NORAD's preferred policy alternative was Alternative IV* (described as survivable forces for defense of strategic and major industrial targets against large scale bomber attack following an ICBM attack), "budgetary and political constraints made its acceptance unlikely," and so the more prudent approach seemed to be Alternative III (nonsurvivable forces which would provide warning and characterization and a highly effective defense of strategic and major industrial targets against a small bomber attack without a prior missile attack). Upon examination of the various options presented for improving the efficiency of existing systems and using the resulting savings to achieve the surveillance capability at longer ranges and lower altitudes needed to meet the projected threat to the year 2000, CINCNORAD believed the first step should be Option 1B, followed by Option 2.¹⁸⁹ These were described in the JUSCAD report as follows:¹⁹⁰

Option 1B: Would remove the interior Pinetree and northern tier JSS radars, remove alert sites along the northern U.S. border, redeploy new Canadian interceptors in south-central Canada, operate existing types of U.S. interceptors, deploy new radars near mid-Canada, and modernize the DEW line with sufficient numbers of radars to provide high-altitude detection and warning (over 10,000 ft). This option, by having radar coverage over most of Canada, would (1) provide a virtual attrition system for bomber attacks from the north attempting to fly under radar coverage (Backfire would have a marginal capability to attack North American targets using such northern routes), (2) provide an infrastructure to support

* Four policy alternatives were developed to describe the range of mission priorities, design requirements, and capabilities which it was possible to derive from NORAD's mission of air sovereignty, warning and defense.

AWACS operations in mid-Canada, and (3) provide a capability to periodically enforce airspace sovereignty in selected areas of the Arctic Region (using the intercept control capability that would exist in the modernized DEW radars). It would cost about \$17.1 billion to implement over the 1980-2000 period and save about 2,700 personnel over the current system.

Option 2: Add long-range, all-altitude coverage to Option 1 as soon as possible to meet the projected threat with the immediate procurement of OTH-B/gapfiller radars. This option would (1) deploy three OTH-B radar sites and a number of gapfiller radars to the DEW line . . . and (2) modernize a significant fraction (five squadrons) of the U.S. interceptor force with current production (F-15 type) interceptors on a schedule consistent with the introduction of OTH-B radars. The number of gapfiller radars would depend on the variant of Option 1 selected and the altitude of coverage desired. Where all U.S. interceptor alert sites are manned with F-4s and F-106s in Option 1, every other U.S. alert site (a total of 10) would be equipped with F-15s in this option to facilitate long-range, over-ocean, all-altitude operations. A space sensor would be planned for deployment in the late 1990s, and Arctic interceptor operations will be required against the projected threat in that period. This option would add \$7.8 billion to the 20-year cost of Option 1, of which about \$2 billion is required over the next five years, and add about 1,000 more personnel to Option 1 (a reduction of 2,000 from the current system).

Considering the technical risks involved, possible fiscal constraints, and competing defense priorities, CINCNORAD believed it unlikely that a production decision on a space based atmospheric sensor would be made before the 1990s; and this left OTH radar, an improved DEW Line, and a relocated CADIN (Continental Air Defense Integration North)/Pinetree Line to provide the capabilities needed through the end of the century.¹⁹¹

On 26 October 1979 the U.S.-Canadian Air Defense Steering Group accepted the JUSCADS, subject to the inclusion of several final changes. Now, according to the Group, each country must evaluate the study and begin

formulating an air defense policy.¹⁹² Upon hearing the final study briefing on 8 November, General Hill remarked that the study's strength was that it pointed out clearly the necessity for both countries to formulate a mutually acceptable air defense policy.¹⁹³ Asked by the JCS to offer his recommendations, General Hill responded to General Jones that he welcomed the opportunity, since " . . . the lack of a clear policy has left this mission area open to such widespread interpretation that realistic planning has become a difficult and unproductive task."¹⁹⁴ NORAD's policy paper examined the evolution of air defense policy from Secretary of Defense McNamara to Secretary Brown and found a consistent lack of interest in building an atmospheric defense against bombers, the argument being that it would be wasteful to do so when the nation possessed no defense against ballistic missiles. Force structure decisions had been based on such official statements, although strategic guidance from the JCS and Canadian Defence Staff regarding NORAD/ADCOM's responsibility to defend North American airspace did not always take into consideration the resultant decline in forces. NORAD maintained "These anomalies between policy guidance, strategic guidance, and programmatic actions . . ." had created a gulf between strategic defense tasks assigned the command and its ability to perform, produced a diversity of interpretations about the mission area which had weakened force planning and delayed modernization, reduced NORAD's effectiveness to a limited ability to exercise sovereignty in North American airspace, eliminated the command's ability to deny "unchallenged access" to intruders, and permitted the Soviets to exploit defense gaps using their existing bomber forces. Recent U.S. and Canadian recognition of the need for a joint policy for North American air defense on which to base future systems acquisition had inspired the JUSCAD study. It had concluded a mutually acceptable air defense policy must precede decisions regarding systems modernization, and several policy alternatives and systems options were offered. Considering the wide range of possible policy options available, NORAD concluded that at a minimum both nations needed " . . . a capability for enforcing collectively, the integrity of North American airspace and for providing sufficient warning of bomber/cruise missile attack to ensure the survivability of United States strategic retaliatory capabilities." To carry out this mission, NORAD said military forces " . . . must have an inherent war-fighting capability to counter a potential threat before it can reach its weapons release point." The size of these forces would be based on the requirement to use the war-fighting capabilities of dedicated forces to enforce the integrity of North American airspace.

Such an "airspace integrity enforcement system" would have the following characteristics, according to NORAD: a capability to detect a potential bomber and cruise missile carrier attack on North America and to provide timely warning; great enough range to permit identification and assessment of the threat short of the weapons release time; a system for employing augmentation forces in time of crisis; and growth potential to counter a future increased cruise missile or bomber threat. NORAD said its recommended air defense policy would enable near term objectives to be maintained (especially it would help solve the disparity between means and ends); and, in the long term, it would facilitate exploitation of new technologies for a future space based atmospheric detection and warning system and directed energy weapons.¹⁹⁵

) Some of NORAD's ideas were used in another policy paper, prepared by the JCS, which went to the Office of the Secretary of Defense (ISA) in early December. The JCS believed the JUSCADS had been useful to a better understanding of present deficiencies in North American air defense, and in identifying and evaluating various options for future planning. Taking particular note that the existing system could not provide warning and attack characterization of a bomber and cruise missile attack, the JCS emphasized the need to " . . . possess the capability to provide the NCA with timely and accurate tactical warning and characterization of a small bomber/cruise missile attack on strategic retaliatory forces and/or the strategic C³ elements for directing the launch of these forces." The JCS believed the "modest, dedicated interceptor force" responsible for determining the character of the attack, and augmented by general purpose forces, would be capable of limiting damage by such attacks. Peacetime control of airspace would be maintained by forces deployed for tactical warning and attack characterization. The JCS agreed that all future planning for tactical warning, airspace control, and air defense should be considered from a North American perspective, and that Canada should be a full partner in such endeavors.¹⁹⁶

While it contained some of NORAD's ideas, the JCS paper placed emphasis not on enforcing the integrity of U.S. airspace, but on warning and attack characterization. NORAD DCS/Plans officers concluded this would call for another assessment of the air breathing threat, a subject about which there had been diverse opinion in the past, and perhaps again block modernization. It was expected the JCS policy would be reflected first in the Secretary of Defense's Defense Policy Guidance document, in January 1980, and later on in

the Consolidated Guidance document. In the meantime, Canada was also at work on a policy paper. The binational Steering Group expected to meet in February 1980 to discuss the next step, a joint U.S.-Canada air defense policy.¹⁹⁷

Manpower

ADCOM/ADC Authorized and Assigned Personnel

ADCOM was authorized 25,236 manpower spaces (3,278 officers, 17,794 airmen, and 4,164 civilians) on the Unit Manning Document (UMD) on 30 June 1979. This was a decrease of 1,136 spaces since the beginning of the year when 26,372 spaces were authorized (3,281 officers, 18,871 airmen, and 4,220 civilians). With the accomplishment on 1 October 1979 of the first phase of the reorganization, ADCOM authorized manpower spaces dropped to 4,129 spaces (1,038 officers, 2,277 airmen, and 814 civilians); and by the end of 1979, with all major reorganization actions completed, only 1,578 manpower spaces were authorized ADCOM/ADC (598 officers, 691 airmen, and 289 civilians). The total reduction during 1979 was 24,794 spaces or 94 percent.¹⁹⁸

The command was overmanned by 649 in airmen (18,871 authorized and 19,520 assigned) at the beginning of the year, but was short of both officers (3,281 authorized and 3,236 assigned) and civilians (4,220 authorized and 3,927 assigned). By the end of 1979, the airman overage had dwindled to 83 (691 authorized and 774 assigned). A modest officer overage of 19 (598 authorized and 617 assigned) existed at this time and in civilians ADC was overmanned by 291 (289 authorized and 580 assigned).¹⁹⁹

NORAD Authorized and Assigned Personnel

NORAD Joint Table of Distribution (JTD) manpower authorizations remained relatively firm. There were 544 manpower spaces authorized (254 officers, 284 airmen, and 6 civilians) at the beginning of 1979 and 527 authorized at the end of 1979 (244 officers, 277 airmen, and 6 civilians). Correspondingly, the total personnel assigned to NORAD decreased by 11 by the end of the year: five fewer officers and six fewer airmen. Each of the six CONUS NORAD Regions lost one officer assigned (except the 26th NORAD Region). The 22d NORAD Region lost three airmen assigned; and ADCOS, 23d, and 25th NORAD Regions each lost one airman assigned.²⁰⁰

Reorganization and Reduction of the Headquarters Staff

The Aerospace Defense Center and its only major subordinate unit, the Aerospace Defense Combat Operations Staff (ADCOS), both activated on 1 December, were authorized a total of 1,521 Air Force spaces (308 for the headquarters and the remainder for the ADCOS). By the end of the year, 57 more spaces had been added (35 for Detachment 1's AWACS mission and 22 for the ADCOS Space Defense Operations Center), to bring the Air Force total authorization to 1,578. By virtue of its joint and binational responsibilities, NORAD/ADCOM (specified) was also allocated 354 Joint Table of Distribution (JTD) spaces in the headquarters, ADCOS, and Det 1, Tinker AFB, OK.* Forty-six of these were Canadian spaces and the remainder U.S. (USAF, USA, USN, and Marine Corps). The total authorized manning (Air Force and Joint manning) was 1,932. Assigned Air Force strength was 1,971, or 39 more than authorized, a reflection of the number of personnel actions still to be accomplished at the end of the year. The traditionally stable JTD showed five fewer assigned than authorized. Total assigned strength to NORAD/ADCOM (specified)/ADC was 2,493.201

The principal manpower savings from the reorganization came from the major command headquarters. Headquarters staff agencies underwent change to one degree or another in the late months of 1979 as they reorganized and reduced to assume the responsibilities of Aerospace Defense Center. Of the 17 deputies and Special Staff Elements which had made up the major command headquarters, three (Chief of Safety, Surgeon, and Chaplain) were not represented in the Center organization; and one (DCS/Engineering and Services) lost its separate status and became a directorate in DCS/Logistics. The 13 remaining were reduced in assigned manpower from 13 to 90 percent during the last half of the year. DCS/Intelligence felt the least bite and Security Police the most, but the average reduction was 51 percent. In a class by itself was DCS/Communications, Electronics and Computer Resources, which by virtue of new responsibilities gained in the reorganization actually increased its strength by 21 percent. Internal headquarters staff changes necessitated by the transition from a major command headquarters to a Center having more limited responsibilities are described in the following paragraphs.

On 1 December 1979, the Deputy Chief of Staff for Personnel reorganized into three primary directorates:

* 173 more belonged to CONUS NORAD Regions and the Alaskan NORAD Region.

Manpower, Plans and Programs, and Military Personnel. There was no change made to the Army Support Element or the Joint Service Manning Division. DCS/Personnel assigned manning dropped 24 percent from June to December 1979.²⁰²

Assigned on 30 June 1979

<u>Officers</u>	<u>Airmen</u>	<u>Civilians</u>	
14 USAF	52 USAF	33 DAFC	
1 Canadian	1 Army	1 NAF	
	Total	102	

Assigned on 31 December 1979

9 USAF	43 USAF	21 DAFC	
1 Army	4 Army		
	Total	78	

The deputate's authorized ADC manning was 9 Air Force and 6 JTD spaces. Ten spaces were authorized the J-1 function in ADCOS. (See Authorized Manning Chart on the following page.)

DCS/Intelligence also reorganized on 1 December 1979. By so doing it hoped to improve the substantive intelligence capability and quality of production in the J-2 organization and to enhance the intelligence planning capability through consolidation of like functions and reduction in the span of control of the deputate. Five directorates were consolidated into three: Operational Intelligence, Intelligence Systems, and Intelligence Plans and Programs.²⁰³ The deputate lost 13 percent of its assigned personnel from the end of June to the end of December 1979.²⁰⁴

Assigned on 30 June 1979

<u>Officers</u>	<u>Airmen</u>	<u>Civilians</u>	
51 USAF	92 USAF	37 DAFC	
11 Army	3 Army		
9 Navy	5 Navy		
	Total	208	

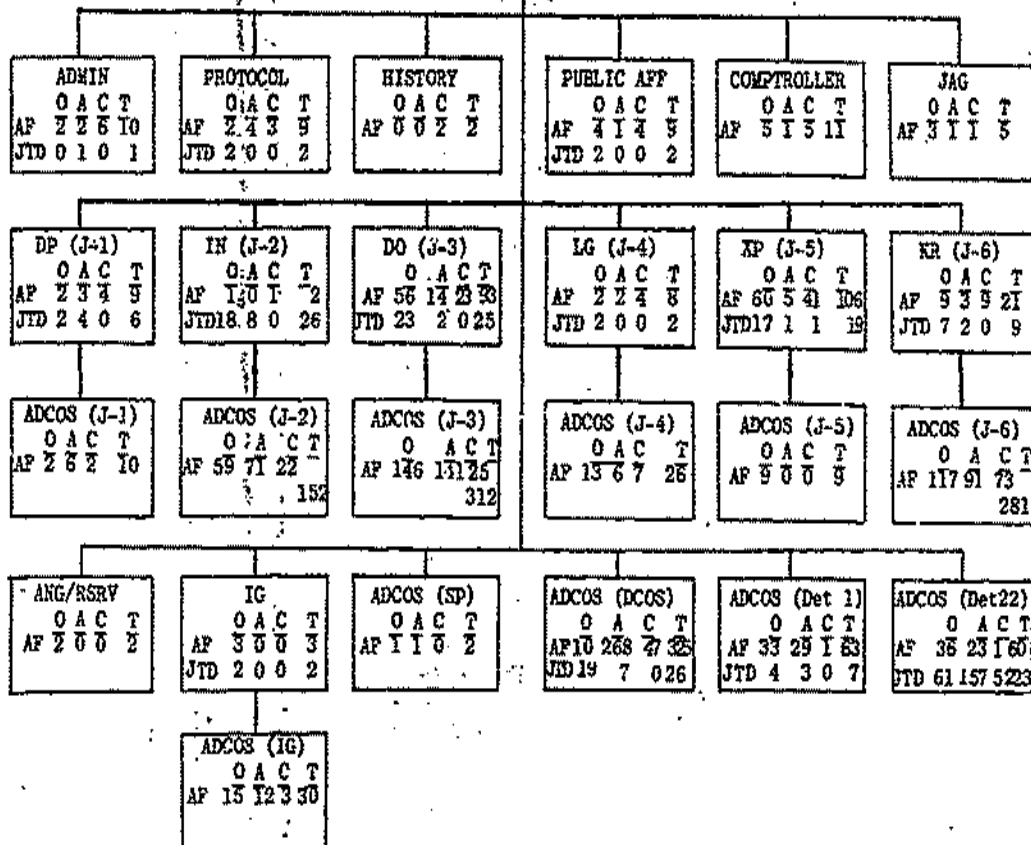
AUTHORIZED AIR FORCE AND JTD MANNING ADC/ADCOS

31 Dec 1979

OPERATIONAL RELATIONSHIPS
HQ NORAD/ADCOM/ADC/ADCOS

COMMANDER-IN CHIEF			
	O	A	C Total
AF	6	7	5 18
JTD	3	1	0 4

RECAP			
	Off	Ann	Civ Total
AF	598	691	289 1,578
JTD	162	186	6 354



Assigned on 31 December 1979

60 USAF	71 USAF	23 DAFC
9 Army	5 Army	
9 Navy	3 Navy	
Total		180

Authorized manning in ADC was 2 Air Force and 26 JTD positions. The J-2 function in ADCOS was authorized 152 positions. (See Authorized Manning Chart on the preceeding page.)

DCS/Operations (J-3) continued to be organized into seven directorates during 1979. The title of the Directorate of Systems Control and Configuration was changed on 1 December 1979 to the Directorate of User Interface Configuration and Control. On 1 October 1979, all responsibility for daily management of air defense forces was transferred to TAC. Generally, the functions lost concerned aircrew training, aircrew evaluation, flying hour management, and other associated responsibilities such as aircraft displays, life support, and airspace. The deputate decreased 27 percent in assigned personnel from June to December 1979. On 30 June the deputate had 217 personnel assigned (133 officers, 43 airmen, and 41 civilians); on 31 December 1979, there were 158 personnel assigned (96 officers, 28 airmen, and 34 civilians).²⁰⁵ Authorized manning in ADC was 93 Air Force and 25 JTD positions. The J-3 function in ADCOS was authorized 312 positions. (See Authorized Manning Chart.)

The loss of resource management responsibility for aerospace defense systems to other commands resulted in substantial changes in DCS/Logistics (J-4). It reorganized from eight directorates to three: Civil Engineering, Weapon Systems Logistics, and Logistics Plans and Programs. Functions transferred were as follows:

- a. The Directorate of Contracting transferred to SAC on 1 November 1979.
- b. The DEW System Office (Detachment 3, 46th Aerospace Defense Wing) transferred to ADTAC on 1 October 1979.
- c. Directorate of Supply functions transferred in part to ADTAC on 1 October and in part to SAC on 1 November 1979.
- d. Directorate of Transportation functions transferred to ADTAC on 1 October 1979 and to SAC on 1 November 1979.

e. Directorate of Logistics Plans and Programs functions for NORAD were retained. All others transferred to ADTAC on 1 October 1979 and to SAC on 1 November 1979.

f. The Directorate of Communications and Electronics was split up among SAC, TAC, AFCC, and NORAD DCS/Communications, Electronics and Computer Resources (J-6). The J-6 staff assumed monitoring responsibility for Hq NORAD Cheyenne Mountain Complex and contributing sensors.

g. Directorate of Logistics Readiness and Information functions transferred to ADTAC on 1 October 1979.

h. Directorate of Maintenance Engineering functions (daily management of aircraft, munitions, and related weapons systems) transferred to ADTAC on 1 October 1979. The control and accountability of the AIR-2A weapons and logistics planning and advocacy for NORAD remained with the NORAD/DCS Logistics staff.

(U) DCS/Logistics reassigned 207 personnel to TAC on 1 October 1979 and 128 personnel to SAC on 1 December 1979. From June to December, the deputate lost 88 percent of its assigned personnel: 206

<u>Manning on 30 June 1979</u>		
<u>Officers</u>	<u>Airmen</u>	<u>Civilians</u>
65	158	64
Total		287
<u>Manning on 31 December 1979</u>		
18	7	10
Total		35

The deputate's authorized ADC manning was 8 Air Force and 2 JTD spaces. Twenty-six spaces were authorized the J-4 function in ADCOS. (See Authorized Manning Chart.)

DCS/Plans and Programs (J-5) organized a new directorate on 1 October 1979 titled the Directorate of Command and Control. On 1 December 1979 the title of the deputate was changed to DCS/Plans, Policy, Programs, and Requirements. Also at that time, the Directorate of Manpower and Organization transferred to DCS/Personnel (J-1). J-5 was reduced 26 percent in personnel manning from June to December 1979. 207

Manning on 30 June 1979

<u>Officers</u>	<u>Airmen</u>	<u>Civilians</u>	
79	17	57	
		Total	153

Manning on 31 December 1979

62	6	45	
		Total	113

ADC authorized manning for the deputate was 106 Air Force and 19 JTD spaces. The J-5 function in ADCOS was authorized 9 positions. (See Authorized Manning Chart.)

DCS/Communications Electronics and Computer Resources (J-6) continued with four directorates, but the title of the Directorate of Regional Computer Center was changed to the Directorate of Automated Data Processing (ADP) Systems. On 1 November 1979, J-6 assumed new organizational functions and responsibilities for supporting NORAD/ADCOM communications and ADP operational requirements; insuring CINCNORAD could exercise end-to-end operational configuration control of communications, electronics, and ADP in the sensors, the connecting communications, the NCMC, and connections with forward users; and establishing an interface to assure responsive SAC, TAC, and AFCS support of CINCNORAD/CINCAD operational requirements, and to insure CINCNORAD/CINCAD retained full configuration management and control of all operations within the NCMC.²⁰⁸

On 1 October 1979, J-6 turned over ADP management responsibility to SAC together with those personnel having project management responsibilities. TAC assumed ADP and communications management responsibilities related to atmospheric defense and a number of personnel were transferred to TAC. AFCS established a dual-hatted Deputy Commander for Strategic Defensive Systems/Strategic Communications Area who also served as the ADC/KRC.²⁰⁹

J-6 gained 21 percent in assigned personnel from June to December. On 30 June 1979, 283 personnel (83 officers, 113 airmen, and 87 civilians) were assigned; on 31 December 1979, 343 personnel (135 officers, 105 airmen, and 103 civilians) were assigned.²¹⁰ ADC authorized manning for J-6 was 21 Air Force and 9 JTD spaces. The J-6 function was authorized 281 spaces in ADCOS. (See authorized Manning Chart.)

The DCS/Comptroller was substantially reduced as a result of the reorganization. The functions of the Directorate of Accounting and Finance were eliminated on 1 October 1979 and the Assistant for Systems and Plans on 1 December 1979. This left two directorates: Budget and Management Analysis. DCS/Comptroller lost 45 (80 percent) of its assigned personnel: On 30 June 1979, 14 officers, 12 airmen, and 30 civilians were assigned; by 31 December 1979, 5 officers (1 Col, 2 Lt Cols, and 2 Cpts), 1 airman (E-8), and 5 civilians (1 GS-13, 2 GS-12s, 1 GS-9, and 1 GS-5) were assigned.²¹¹ The ADC authorized manning was the same as the assigned spaces.

On 1 October 1979, USAF redesignated the information function as Public Affairs, and responsibility for the public affairs of former ADCOM units was transferred to TAC on that date. The directorate assumed responsibility for Public Affairs for the Aerospace Defense Center on 1 December 1979, concurrent with transferring to SAC responsibility for the public affairs of the units it gained on that date. Difficulties were encountered in maintaining a full scope of activities to support CINCNORAD after a staff reduction of 44 percent. The directorate attempted to cope with the problem by using overage military personnel working outside their AFSC's and a civilian overhire. Eighteen personnel were assigned on 30 June 1979: 7 officers, 4 airmen, and 7 civilians; on 31 December 1979, 10 personnel were assigned: 3 officers, 2 airmen, and 5 civilians.²¹² The directorate's authorized ADC manning was 9 Air Force and 2 JTD spaces.

The Judge Advocate function became a part of the ADC staff on 1 December 1979. The function was reduced 20 percent (from three to two divisions), and from 10 personnel assigned (4 officers, 2 airmen, and 4 civilians on 30 June) to 8 personnel assigned on 31 December (3 officers, 1 airman, and 4 civilians).²¹³ The Judge Advocate's authorized ADC manning was 5 Air Force spaces (3 officers, 1 airman, and 1 civilian).

The Directorate of Administration continued with two divisions, but lost six of its seven branches and 82 percent of its assigned personnel. The Word Processing Center was discontinued on 1 October 1979. The Printing Plant and the Publishing and Forms Distribution Office transferred to SAC's 46th Aerospace Defense Wing on the same date. The Forms Management section was also discontinued on 1 October. A total of 60 personnel (1 officer, 8 airmen, 27 DAFC, and 24 WB civilians) were assigned on 30 June 1979, but by 31 December 1979, there were only 11 personnel assigned (2 officers, 3 airmen, and 6 civilians).²¹⁴ ADC authorized manning for the directorate was 10 Air Force and 1 JTD spaces.

With the transfer of former ADCOM units to TAC and AFCS on 1 October, and SAC, on 1 December, the Inspector General no longer had responsibility for the inspection of those units. The NORAD/ADCOM (specified)/ADC IG continued to perform the scheduling and budget function for ADTAC/IG and to augment the ADTAC/IG on inspection trips as required through the end of the year. The IG retained responsibility for operational evaluation of units gained by TAC and SAC. The IG had 109 personnel assigned (44 officers, 60 airmen, and 5 civilians) on 30 June 1979. By 31 December, it had been reduced 76 percent to 26 assigned personnel (15 officers, 8 airmen, and 3 civilians).²¹⁵ Authorized manning was 3 Air Force and 2 JTD spaces in the headquarters; 30 more spaces were authorized the IG function in the ADCOS.

The office of the Chief of Safety was assigned 17 personnel (7 officers, 4 airmen, and 6 civilians) on 30 June 1979. Safety was realigned under ADTAC on 1 October 1979. ADC had no resource management responsibility and thus no Safety function. Fourteen personnel were reassigned from ADCOM to TAC on 1 October, 5 officers, 3 airmen, and 6 civilians.²¹⁶

The Command Surgeon was assigned 15 personnel (5 officers, 7 airmen, and 3 civilians) on 30 June 1979. ADCOM medical facilities were transferred to TAC on 1 October and to SAC on 1 December 1979, and the office of the ADCOM Surgeon was discontinued.²¹⁷

The Command Chaplain was assigned 7 personnel (2 officers, 4 airmen, and 1 civilian) on 30 June 1979.²¹⁸ The ADCOM Command Chaplain function was discontinued on 15 October 1979.²¹⁹

The Director of Security was reduced on 1 December 1979 from three divisions and 15 assigned personnel (5 officers, 7 airmen, and 3 civilians) to a single entity, the Directorate of Security, with two positions: Lt Col (O-5) and MSgt (E-7). The functions were reduced to managing the security for Headquarters NORAD/ADC and the Security Police function at the NCMC and providing liaison with the gaining commands to assure optimal security for CINCNORAD's operational forces.²²⁰ The directorate was authorized 2 Air Force spaces in ADCOS.

As a result of the reorganization, the Office of History was reduced 50 percent, from four civilian spaces to two. Authorized ADC manning for the Office of History was two Air Force spaces.

Effective 1 December 1979, the DCS/Engineering and Services was disestablished and the entire staff of 87 (9 officers, 11 airmen, and 67 civilians) reassigned elsewhere.²²¹ Major command engineering responsibility for all of the TAC-gained units (those with an atmospheric defense mission) was transferred to Headquarters TAC. Major command engineering responsibility for SAC-gained units (those with missile warning and space surveillance missions) was transferred to SAC. Major command engineering responsibility for the NORAD Combat Operations Center remained vested in the Aerospace Defense Center (ADC).²²²

The Director of Civil Engineering (0-6) with a small staff was established under DCS/Logistics (J-4) on 1 December 1979. Their responsibilities included:²²³

a. Performing MAJCCM functions for civil engineer input on programs for modifications to existing systems and the construction of new systems or facilities to support the NORAD mission. Although the responsibility for these systems rested with SAC and TAC, the NORAD staff reviewed the programming, assisted in the advocacy role, and followed the design to assure that the civil engineering requirements as perceived by NORAD were included in the design and construction.

b. Providing civil engineering Battle Staff support to CINCNORAD.

c. Maintaining liaison with major command/Director of Engineering supporting NORAD units.

d. The NORAD office symbol was NORAD/J-4C; the ADC office symbol was ADC/LGD.

Civilian Personnel

The ADCOM reorganization showed a net civilian manpower savings in the USAF Greenbook, January 1978, of 443 personnel. This figure was revised to 356 in May 1979, and to 261 in July 1979. The ADCOM Director of Civilian Personnel, Mr. Charles L. Shinn, began extensive planning early in 1979 for civilian personnel transfers and reduction in force (RIF) expected to ensue as a result of the reorganization. Other military agencies in the area, such as the Air Force Academy and Fort Carson, were contacted, and they agreed to place a hiring freeze on permanent employment until ADCOM identified its RIF'd civilian employees. Coordination was effected also with the Office of Personnel Management in Denver. That office agreed to contact all Federal agencies in its area to ask for cooperation in placing RIF'd employees. The State

Employment Commission also agreed to identify potential job markets for ADCOM employees affected. (This action did not become necessary.) The staff of the Directorate of Civilian Personnel developed and published a step-by-step plan of action in April 1979 which served as a Guide and Checklist for Transfer of Function and Reduction-in-Force actions.²²⁴ Mr. Shinn was able to learn much from the personnel difficulties encountered by AFCS during its transfer from Richards-Gebaur AFB to Scott AFB several years before.

The first group counseling of civilians on the reorganization as it affected the headquarters was held in the auditorium of the Chidlaw Building, at Cheyenne Mountain Complex, and Peterson AFB on 19 April 1979. An informative booklet, "Procedures for Functional Transfer of Civilian Employees," was handed out which explained various subjects in planning and executing a functional transfer. Personnel were invited to ask questions at the end of the session. Another group counseling meeting was held on 20 September 1979.²²⁵ Representatives of DOD, USAF, SAC, TAC, and AFCS were at this meeting to answer questions. In late November 1979, individual personnel counseling was offered to interested personnel by appointment. Mr. Shinn and his assistant counseled 80 personnel during these sessions. In the meantime, the Director of Civilian Personnel made his staff available for walk-in counseling. Mr. Shinn said that all but one personnel grievance was resolved in individual personnel counseling before they grew into serious problems. In the one instance, he called a disgruntled individual who had written to a Congressman about the way the reorganization was handled by the Civilian Personnel Office, and after a personal counseling session, the employee understood the situation and was satisfied with personnel actions which affected her.²²⁶

HQ ADCOM began reorganization effective 1 September 1979.²²⁷ The Director of Civilian Personnel, Peterson AFB, CO, delivered a Preliminary Offer of Transfer of Function letter to 151 civilian employees on 4 September 1979 to transfer to TAC and 113 accepted the offer; 50 employees were offered transfer to SAC and 40 accepted; and all 5 employees offered transfer to AFCS accepted.²²⁸ (The Preliminary Offer letter was merely a survey to identify those employees who wished to transfer with their functions and those who, under no circumstances, would transfer.)²²⁹ Letters of Specific Transfer of Function Offers to TAC were delivered to 80 employees on 1 November 1979 and 42 accepted; 28 employees were given specific offers to transfer to SAC and 11 accepted; and 2 employees were offered transfers to AFCS and none accepted.²³⁰ (The Specific Offer could be changed, but only for a better offer.) Employees were scheduled to be transferred to TAC,

SAC, AFCC, and ADC on 11 January 1980.²³¹ Approximately 25 employees of the 42 accepting transfer to TAC (assigned to ADTAC) were scheduled to transfer about April 1981.²³²

A total of 152 employees received Reduction in Force (RIF) letters on 1 November 1979.²³³ Of that number, 110 were reassigned laterally, 39 were downgraded with saved pay, and 3 were separated from Civil Service to accept a better offer. Civilian employees who elected to retire due to the reorganization totaled 125: 49 voluntary retirements, 44 early optional, 25 discontinued service, and 7 on disability.

The delay in accomplishment of the reorganization, caused by the civilian suit brought against the Government, prolonged the unsettled condition of civilian employees and aggravated manning shortages. Many were long-time employees of the command and had deep roots in Colorado Springs. A high percentage were former military personnel who had retired and moved here because it was the geographical area of their choice. They were not dependent upon their civilian income alone. Over one-half the headquarters civilian work force was eligible for some kind of retirement. Many accepted the preliminary offer, and even the specific offer, with the intention of turning the job down in the end if something more attractive came up in the meantime. Many senior people, not wishing to move from the area, looked to retirement or employment with another Federal agency in the area. Employees with little seniority and facing RIF action, looked also to other employment either in the Federal or civilian sector. Efforts to provide opportunities for employees (a civilian hiring freeze at Peterson AFB from April 1979 to 11 January 1980 to create positions for those affected and the priority given to hiring ADCOM employees by the Air Force Academy and Fort Carson) were perhaps too successful. About 75 experienced personnel (ranging from clerks and secretaries to highly qualified engineers) accepted jobs at AFA and Fort Carson rather than transfer to SAC or TAC or wait for the possibility that a NORAD/ADC position would be offered. ADCOM, therefore, suffered a loss of expertise from which it would take years to recover.²³⁴

Looking back over 1979, Mr. Shinn said some mistakes were made in civilian personnel actions because of inexperience: this was the first time some civilian personnel specialists had handled a reorganization of a major command split in so many different ways. But he emphasized that keeping all employees informed of both positive and negative aspects of the situation did more than anything else to gain positive support from civilian employees.²³⁵

In summary, the revised Greenbook civilian manpower savings of the ADCOM reorganization was planned to be 261. More than that was actually saved: 42 accepted transfer to TAC, 11 to SAC, 75 personnel transferred to AFA and Fort Carson, 3 separated, 125 retired, and 110 were reassigned laterally, making a total of 366. This left NORAD/ADC at the end of 1979 with vacancies to fill.

Officer Grade Reductions

In December 1978, HQ USAF imposed a reduction in officer grades upon ADCOM for FY 79, the most serious of which were reduction of 5 colonel authorizations to lieutenant colonel and 238 captain authorizations to lieutenant.²³⁶

Every effort was made to minimize the downgrading of captain authorizations in active operational units. To this end, candidates for reduction were selected from radar squadrons and other units which were programmed to inactivate in FY 79 or FY 80, thereby a minimal personnel impact and less grade constraints would be experienced by remaining operational units. One-third of the grade reductions were made at Kingsley Field, OR; the 17th Defense System Evaluation Squadron, Malmstrom AFB, MT; and short-term radar squadrons. Based on future operational requirements, 50 captain (Air Weapons Controller, AFSC 1744) authorizations were reduced to lieutenants. The remaining 109 captain authorizations reduced to lieutenant were in the field and in HQ ADCOM.²³⁷

The five colonel authorizations downgraded to lieutenant colonel were: Commander, Kingsley Field, OR; Director of Engineering and Construction, DCS/Engineering and Services, ADCOM; Director of Logistics, 20th Air Division; Director of Logistics, 24th Air Division; and Commander, 17th Defense System Evaluation Squadron.²³⁸

On 15 March 1979, Lieutenant General B.L. Davis, DCS/Manpower and Personnel, HQ USAF, wrote to General Hill, CINCNORAD, expressing concern over the number of general officer authorizations Congress was pressuring the military services to reduce and proposed a drawdown of generals after the ADCOM reorganization. General Hill replied on 5 April 1979.²³⁹

Retention of the joint staff general officers is essential to preserving the integrity and influence of the NORAD and ADCOM operational missions in the post reorganization environment. It will be critically important, particularly during the early days of the reorganization, that clear, usable, and effective

channels be maintained into equivalent staff functions of SAC, TAC, and AFCS....Moreover, USAF must honor the commitment to allies that there be no degradation of mission or responsibilities for ADCOM assets to SAC and TAC. There is inherent risk of an allied preception of a breach of faith by the USAF if general officer positions are downgraded that retain responsibility for operational control of NORAD assets. This risk may prove to be unacceptable.

USAF directed ADCOM to conduct an annual review of general officer manning by 15 June 1979 and reduce its general officer strength for FY 80 by one general officer manned position. The Brigadier General position in DCS/Intelligence (J-2) was selected for manning by an O-6.²⁴⁰

CINCAD received a joint message, on 19 September 1979, from the Secretary of State to the American Embassy in Ottawa which announced that USAF planned to redesignate the NORAD/ADCOM command position to a three-star billet on 31 December 1979. This plan was based on manpower considerations made necessary by a Congressional mandate to reduce general officer strength in Fiscal Year 1978.²⁴¹

U.S. Army Manpower Resources in NORAD

Following public announcement of the ADCOM reorganization proposal and withdrawal of Army Air Defense Artillery (ADA) resources from NORAD on 9 April 1979,* NORAD examined Army resources in each region and the headquarters staff regarding their future mission essentiality. The FY 80 NORAD/ADCOM Joint Manpower Program (JMP), 1 October 1978, had been approved by JCS on 26 March 1979, which reflected authorizations for FY 80 and requirements for FY 81 through FY 84. JCS lag time in approving any change from one service to another in the JMP was one year. As a result of the review, an out-of-cycle change to the NORAD Joint Manpower Program (JMP) was submitted to the JCS on 14 August 1979. The JMP reflected a net NORAD reduction of 22 Army spaces. After the ADCOM reorganization, 14 additional Army spaces in the regions were to be converted to USAF spaces, amounting to a total Army reduction of 36 spaces.²⁴²

* The loss of ADA is discussed in a later chapter.

Increased Manning for E-3A and SPADOC

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On 14 May 1979, ADCOM requested that USAF increase NORAD manning for mission crews (16 officers and 16 airmen spaces), standardization and evaluation requirements (1 officer and 1 airman spaces), command post augmentation (1 airman space), and administrative augmentation (1 airman space). With the exception of the administrative augmentation, USAF approved manpower requirements on 30 July 1979 for 17 officers and 18 airmen in the FY 81 Budget submission.²⁴⁴

In June 1979, USAF authorized 23 manpower spaces to NORAD/ADCOM for the Space Defense Operations Center as it was directly tied to the Anti-Satellite System (ASAT). All spaces were to be carried in a new functional account code titled SPADOC.²⁴⁵

Air Weapons Controller Manning

Air Force wide problems of low manning and experience levels of Air Weapons Controllers (AWCs) (AFSC 17XX) were particularly severe in ADCOM. Overseas users of AWCs required assignment of experienced personnel, and this kept ADCOM's experience level low; and priority manning was given to a new tactical control group in Germany and the E-3A AWACS. HQ USAF had long recognized the poor retention rate and low manning within the Air Weapons Controller career field and had held several symposia to consider the problem. In a symposium in May 1977, a master plan called the "USAF 17XX Management Plan" was initiated which promised to be the long sought-after solution to ADCOM's problems. The master

plan called for increasing the number of prior experience officers returning to the field and improving basic AWC training so that new accessions could be employed overseas directly from basic weapons controller training.

In FY 77, and several years preceding that year, the requirement was 240 personnel allotted to training as Air Weapons Controllers. By FY 78, the trained personnel requirement (TPR) increased to 310 new 17XXs, and 30 prior experience officers returned to the career field. FY 79 accessions increased to 434 new 17XXs, plus 30 prior experience AWCs: 52 went to overseas short tours, 153 to United States Air Forces Europe and Tactical Air Command control units, 44 to Airborne Warning and Control System, and 185 to ADCOM. 246

To improve Air Weapons Controller training, the Air Training Command initiated a manual control system qualification training (SQT) course at Tyndall AFB, FL, on 27 February 1978. All subsequent graduates to this course went directly overseas.

January 1979 marked the low point in both manning (75 percent) and experience level in AFSC 17XX, but by 1 September ADCOM air divisions had reached 83 percent manning. By March 1980, ADCOM was projected to be approximately 100 percent manned in the Air Weapons Controller (AFSC 17XX) career field. 247

Budget

In November 1978, CSAF had notified all major commands that no additional funds would be forthcoming, and the commands would have to live within the levels provided. At that time, the total ADCOM Operations and Maintenance Program alone totaled \$355 million. 248

In FY 79, as in the two preceding years, by applying very stringent budget practices and deferring to FY 80 any programs not absolutely essential to the mission, ADCOM stayed within its budget of \$372 million as of 30 September 1979.

Over 47 percent of the ADCOM Budget (\$177.2 million) was obligated to contracts. Other major expenditures were \$74 million for civilian pay and a like amount for supplies. Many of the supplies were purchased during the last month of the fiscal year, at which time ADCOM replenished depleted stock levels in all areas including fuels.

During the last five weeks of the fiscal year, almost \$6 million of supplemental funding was provided by USAF.

This included \$188,000 to cover flying hour supplies for the F-4 aircraft in Iceland, and \$45,000 to continue the AWACS Operations Analysis Study. USAF provided another \$1.8 million during the last week of the fiscal year, which was used primarily to purchase asphalt for repair of the runway and ramp at Sondrestrom AB, Greenland.²⁴⁹

All major programs were funded during the fiscal year. These included the entire ADCOM flying hour program, civilian pay, utilities and fuels, and repair of the roofs of the Thule BMEWS buildings which ADCOM had attempted to fund for the past three years. Not only were the materials purchased in FY 79 for the project, but also a contract was let for the work. Over \$2.1 million in facility projects were funded. The replacement of bladder fuel tanks at DEW Line sites with metal tanks continued. This was expected to help eliminate the problem of fuel leakage. Water pipe was also purchased to replace deteriorated pipe on the DEW Line. A major unfunded project for the past three years had been repair of the Sondrestrom runway. Almost \$2.8 million of the \$6 million supplemental purchased asphalt for the project. Finally, tubes and other electronic supplies were purchased to support BMEWS and the DEW Line. This was significant because many of the components would soon be out of production, and these purchases insured future operations.

In planning for the reorganization of the Aerospace Defense Command, the DCS/Comptroller, Colonel L. R. Ravetti, proposed reorganization actions (unit transfers and closures, and MAJCOM changes) coincide with the end of the fiscal year. Other MAJCOM Comptrollers concerned concurred in the recommendation, but it was not adopted. To insure equitable financing for all of the ADCOM units to be gained by other commands during FY 79, the ADCOM Comptroller retained control of all FY 79 budgeting and accounting for ADCOM units transferring to other commands until 15 November 1979. This situation whereby for a short time financial resources remained with ADCOM, but all other responsibilities transferred to other major commands proved awkward and tended to undermine resource management.²⁵⁰

In summary, ADCOM was able to fund all mission-essential items in FY 79. The original deficit, however, was over \$39 million. With \$17 million provided by USAF, this left \$22 million of requirements not funded. Many of these were important programs and projects that had to be delayed or cancelled due to lack of funds.²⁵¹

Funding responsibility for FY 80 was transferred to the gaining commands--SAC, TAC, and AFCS--on 1 October 1979. After USAF allocation of the FY 80 budget to the gaining

commands and ADC, there was a remaining deficit of almost \$55 million, excluding the withholds which were funds USAF identified but held back until the command proved they were needed.²⁵²

As was usually the case, the unfunded programs were in Major Force Programs (MFP) I (Strategic Forces) and II (General Purpose Forces). The \$750,000 unfunded in MFP II consisted primarily of \$724,000 to continue AWACS Operational Analysis study. The remaining \$26,000 affected F-4 aircraft supplies. The largest deficit was in MFP I, \$59.6 million. Subtracting the withholds (\$5.5 million), the remaining deficit was \$54.9 million (about \$20 million for SAC, \$20 million for TAC, and \$15 million for ADC).²⁵³

The FY 80 ADC and ADCOM Operations Operating Budgets, as estimated at the end of the calendar year, are shown on the following page.

ADCOM OPERATIONS OPERATING BUDGET, FY 78, FY 79, FY 80 (Est)
(in millions)

<u>Major Force Program</u>	<u>FY 78</u>	<u>FY 79</u>	<u>FY 80 (Est)</u>
I Strategic Forces	\$323,961	\$353,866	\$32,263
II General Purpose Forces	3,536	4,062	457
III Intelligence and Communications	10,082	6,402	1,176
IV Airlift/Sealift	75	87	0
VII Central Supply and Maintenance	0	5	12
VIIIA Training and Other General Personnel Activities	1,464	1,366	39
VIIIB Medical Programs	5,844	6,669	0
IX Administration and Associated Activities	<u>52</u>	<u>51</u>	<u>40</u>
TOTAL	\$345,014	\$372,508	\$33,987

SOURCE: Data furnished by Maj F. E. Byford, ACB, 25 Mar 1980; and Operating Budget Authority by Major Force Program, Dir of Budget, HQ USAF, for FY 78 and FY 79.

CHAPTER II


BALLISTIC MISSILE SURVEILLANCE AND WARNING

Introduction

The Ballistic Missile Surveillance and Warning System consisted of the Ballistic Missile Early Warning System (BMEWS); the Sea-Launched Ballistic Missile Detection and Warning System (SLBM D&W); the Perimeter Acquisition Radar Attack Characterization System (PARCS); the Defense Support Program (DSP); and contributing sensors from the Space Detection and Tracking System (SPADATS). Information gathered by these systems was transmitted to the Missile Warning and Display System in the Missile Warning Center of the NORAD Cheyenne Mountain Complex. There, attack characterization and assessment was made to determine the potential of a ballistic missile attack upon the U.S. and Canada and the information transmitted to the National Command Authority.

The 9 November Incident

For about three minutes on the morning of 9 November 1979 a test scenario of a missile attack on North America was, through a combination of anomalies and coincidences, transmitted from a test device (a Message Generator Recorder or MG/R) to the operations side of the 427M computer system in the Cheyenne Mountain Combat Operations Center.



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(U) The 9 November incident prompted considerable interest on the part of the press, within the Congress, and at HQ USAF, the JCS, and OSD. In response to a number of inquiries about the brief alert, the OSD released details to the press. Air Force, JCS, and OSD officials visited NORAD soon after the event for briefings. The JCS produced a number of action items or directions for corrective action. As was routine for such an event, NORAD established an Operations Review Board (ORB) on 12 November. In late November, General Allen directed the Air Force Inspector General to visit the Cheyenne Mountain Complex to look at the ADCOM reorganization and the 9 November event.

Press comment stimulated by the OSD news release evidenced concern about the general health of the air defense system,³ but with the OSD announcement late in the month that the problem had been solved, interest waned.⁴ Briefings to Congressional members and their staffs carried through this theme: some weakness had been discovered in the system, which were being corrected, but it was fundamentally sound. The incident had reinforced the belief that the system must have redundancies built in and that human judgment played a crucial role in such circumstances.⁵ The "five minutes" reported in the press had been spent confirming beyond doubt that it was false, but in the meantime certain precautionary measures had been taken.⁶

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At the end of 1979 the internal NORAD Operations Review Board investigation continued, and the USAF IG inspection was underway. Many of the more obvious and quickly accomplished fixes and procedural changes had been made, and increased emphasis had been given to training.¹⁰ Systems improvements would take longer and involve considerable expense. After the fact, NORAD officers recalled that in 1974 the command had recognized the potential hazards involved in continuing to develop the 427M system while at the same time it was in operation, and had requested a fourth computer for testing. Lack of funds prevented its acquisition.¹¹ Now they settled on a testing moratorium in the near term while preparing plans to remove such activity from the Mountain altogether. From the NORAD perspective, also, it seemed the attention it received after 9 November had at least one positive aspect in that senior Washington officials were taking increased interest in and gaining a greater understanding of the command, its systems, and problems.

Ballistic Missile Early Warning System (BMEWS)

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In December 1978 Generals Hill and Slay had agreed that it was critical that the BMEWS IBM 7090 computers be replaced. ADCOM wanted the new computers to have the growth potential to accommodate future BMEWS modernization. HQ AFSC said that since it lacked full definition of the threat scenario for 1985, it could not fully define hardware requirements to be sent to contractors in bid solicitations. It therefore recommended an interim system which would provide a capability equivalent to the present 7090. More time would then be available to build a new system around a more completely defined threat.¹³ ADCOM replied that recent evidence indicated that BMEWS computers were deteriorating more rapidly than expected and that the rate of deterioration had increased. Since it might not be feasible to provide final computer hardware in 1981, the command found the interim ADP hardware option "acceptable." But regardless of the approach taken on the computers (interim ADP or direct to a final system), ADCOM wanted upgrade of the radars to proceed without interruption, with a goal of completing the Thule and Clear sites in FY-83.¹⁴ In a 26 April 1979 meeting, Air Staff, AFSC, ADCOM, and ESD representatives agreed on a course of action to replace

the computers at Thule and Clear by the end of 1981 and at Fylingdales six months later. The computers to be purchased would be compatible with the current BMEWS radars and have the growth potential to support the later upgrade program. ESD then looked to March 1980 as the contract date for replacement of the 7090 computers.¹⁵ This planning was substantiated in a new Program Management Directive issued in July. It also called for upgrade of the BMEWS radars not later than the fourth quarter of FY-85 either by modernization or replacement. Funding of this work had been held up by OSD, however, pending results of a study which would examine the relative merits of upgrading BMEWS and replacing all or some of the BMEWS radars with phased array radars.¹⁶

In late December 1978, Dr. Gerald P. Dinneen, Assistant Secretary of Defense (Command, Control, Communications, and Intelligence), encouraged by a Raytheon Corporation proposal for replacing BMEWS radars with phased array radars, tasked the Air Force to examine the option. ADCOM made its own evaluation of the Raytheon proposal and found each site would cost not \$88 million, as stated by Raytheon, but \$150 million. The difference seemed to be that Raytheon had not counted in all the additional costs peculiar to arctic construction nor all the costs of spares, training, contractor profit, etc., which would be costs to the government.¹⁷ In early 1979 ADCOM provided Operations and Maintenance (O&M) cost estimates and a threat coverage analysis to the Air Staff study, and by the end of April ESD had completed its examination of cost estimates:¹⁸

1. The initial cost for a phased array radar at Thule alone was much greater than BMEWS modernization for all BMEWS sites.
2. With the phased array adequate threat coverage was possible, but it presented greater technical risk and a later Initial Operational Capability (IOC) date than BMEWS modernization.
3. About a 24 percent reduction in O&M costs would be realized using an upgraded PAVE PAWS phased array.

In his quarterly letter to the Secretary of Defense in mid-July General Hill expressed concern that the upgrade of

detection and tracking radars " . . . appears to continue to lead a precarious life." It had suffered more twists and turns in the budget process than CINCNORAD could keep track of and was again in trouble because debate over which was better, phased array or modernized BMEWS, had been prolonged despite conclusions of an Air Force study that upgrading the present radars was best.¹⁹ In a letter to Dr. Dinneen later in July, General Hill compared the two options.

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General Hill said modernization was the preferred option because it would be available earlier than phased array and would be cheaper.²⁰

The OSD's protracted examination of the phased array alternative to BMEWS modernization had the effect of delaying funding for the radar upgrade.²¹ Funding of the Missile Impact Predictor upgrade (including computers) remained on schedule, however, anticipating contract award in March 1980, until early September. OSD then deferred all \$9 million in FY 80 R&D funds for BMEWS, and this included \$3.9 million needed for the MIP upgrade.²² In response to Air Force expressions of concern, Dr. Dinneen restored the funds on 15 October, but also said the cost was too high (nearly \$40 million), and steps would be taken to reduce that amount by at least \$10 million.²³ A month later, Hq USAF reported OSD had agreed that the Air Force could proceed with upgrade of the Thule detection radar.²⁴ It was a beginning, but funding problems persisted. In December the Senate Armed Services Committee and the House Appropriations Committee jointly agreed to delete the \$9 million, which again included \$3.9 million for the computer replacement contract. The Congressional committees reportedly would consider BMEWS improvements as part of a larger Missile Warning Master Plan only after a report it had requested from the DOD had been submitted, one which at the end of the year was overdue. This delay carried the potential of six months to a year slip in the program if the contract could not be let in March. The hope was that the computer replacement program could be detached from the

Master Plan, and it was to that end the Air Force was working at the end of the year.²⁵ Major General W. C. Moore, VCINCAD, noted in a letter to Hq USAF/PA in December that sensor improvements designed to lead ADCOM

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Sea Launched Ballistic Missile Detection and Warning (SLBMD&W) System

The SLBMD&W System consisted of six AN/FSS-7 radars and one AN/FPS-85 phased array radar located on the East, West, and Gulf Coasts of the United States. The three West Coast sites were at Mt Hebo, OR; Mt Laguna, CA; and Mill Valley, CA. The two on the East Coast were at Fort Fisher, NC; and Charleston, ME. The Gulf Coast radar was at MacDill AFB, FL. The AN/FPS-85 was located at Eglin AFB, FL, also on the Gulf.

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The FSS-7s, or Fuzzy-7s as they were not always affectionately called, had begun operations on an interim basis in July 1970, had reached Interim Operational Capability (IOC) on 5 May 1972, but because of inherent system deficiencies, had never officially reached Final Operational Capability (FOC). The radars were a modification of the FPS-26 height-finder radar used for aircraft detection and required a great deal of logistical and maintenance attention to keep them at a reasonably high level of operational availability. Constant attention increased the system's availability from about 50 percent early in its operational life to about 85 percent more recently, but the inherent deficiencies remained. Also, the FSS-7 was not capable of detecting some of the trajectories in which the Soviets might fire their SS-6 SLBMS, and it would miss altogether most SSN-8 trajectories.

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The effectiveness of the ground-based segment of the SLBMD&W system would be substantially improved with the acquisition of two dual-faced AN/FPS-115 phased array radars (acronym PAVE PAWS). ADCOM wanted four sites, but by the end of 1979 only two had been funded, one for each coast to cover known threat areas. Planning for PAVE PAWS was completed in the middle 1970s, and although funding was delayed, beginning in FY-75 Congress provided \$47.7 million of a total estimated \$126 million for sites at Otis AFB, MA, and Beale AFB, CA. Raytheon Corporation's Equipment Division was the prime contractor and IBM developed the software. Planning called for the Otis site to be completed in 36 months and the Beale site in 48 months. Design and site investigation was completed for Site I in April 1976 and Site II in November of that year. Site preparation at Otis began in November 1976 and at Beale in March 1977. At the end of 1978 construction was on schedule. It was then expected that Otis would achieve Initial Operational Capability (IOC) in April 1979 and Beale a year later. After a period of operating the Otis site in conjunction with the FSS-7 sites, ADCOM planned to close the East Coast sites in June.^{27*}

In early January 1979 Air Force Systems Command's Electronic Systems Division began the 30-day Reliability, Maintainability, and Availability (RM&A) phase of the Development Test and Evaluation (DT&E) checkout of the Otis PAVE PAWS technical facility. Members of ADCOM's 6th Missile Warning Squadron (MWS), activated the previous October, worked alongside ESD personnel and the contractor to gain experience in what would be their future operational duties. For the next two months, until the test was completed on 25 February, the system was available 98.7 percent of the time (57 failures which actually occurred or were intentionally injected into the system were corrected within the three hour time limit allowed). This completed the DT&E portion of the system's progression to operational status. The next phase, a 60-day Initial Operational Test and Evaluation (IOT&E), began 6 March. For the first month the Air Force would operate the system 12 hours a day and the contractor

*The FSS-7 at MacDill AFB would be retained until a new southeast PAVE PAWS site, planned but not yet approved, became operational.

would use the other 12 to clean up discrepancies. Plans called for the Air Force to accept the Otis site from the contractor on or about 13 April. Thereafter, the 6 MWS would operate the system 24 hours a day, and if operation at near or full power for an extended period confirmed design specifications and capabilities, the Air Force planned to declare it operational in June.²⁸

ESD's Program Office accepted delivery of the site on 12 April, with the provision that remaining deficiencies would be cleaned up by the contractor.²⁹ IOT&E was completed 21 May,³⁰ but contractor efforts to correct outstanding anomalies discovered during that time continued into early July. The turnover date to ADCOM remained unconfirmed, and as a result, the two East Coast FSS-7 sites continued operations beyond their planned June closure date.

ADCOM now looked to 1 August as the date it would acquire the Otis facility, commence dual operations (with the FSS-7 sites), and begin processing the data acquired by the new facility as "real world."³¹ Between 15 July and 1 August the 6 MWS operated the system in a "real world" mode (although data was treated as test information), in order to verify the contractor had completed his corrections.³² On 02/0001Z August the dual operation began.³³

Operation of the PAVE PAWS radar under full power conditions revealed serious weaknesses in the power system. Normally, the radar worked on commercial power, but six diesel generators had been provided for backup in case that source was disrupted. For the radar's energy pulse to reach out to its maximum range, electrical power was drawn into a capacitor bank, built up, then discharged or surged into space. This procedure, called power surging, happened every 51 milliseconds. The withdrawal of large amounts of power from the commercial system caused a slight flickering effect in lighting within the technical radar facility, the power plant, and in the surrounding civilian community of Sandwich, Massachusetts. As operations at full power became more

continuous, complaints from residents threatened to provide new ammunition to those opposed to the facility on the grounds of its adverse impact on the local environment. These power fluctuations also were fed back into the backup diesel generators when they were used, making them incapable of operating for extended periods as the primary power source. Potentially most serious of all, instabilities caused by the power fluctuations might find their way back into the radar's electronics and degrade the sensor.³⁴

ADCOM believed PAVE PAWS must have reliable power before it assumed operational responsibility and as a consequence closed its FSS-7 sites, and it urged AFSC to take action to correct the problem.³⁵ AFSC shared ADCOM's concern, and directed ESD to contract with Raytheon to review the three-sided power problem, i.e., the ability of the diesels and generators to operate the radar, interference with commercial power in the local community, and light flickering in the technical facility and power plant.³⁶ By the end of August, Raytheon had come up with a temporary fix. It would modify the diesel generators, voltage regulators, governors, etc., to enable the generators to handle reliably power fluctuations without affect to the technical facility or damage to themselves; install a harmonic filter to eliminate interference with commercial power in the community; and determine the type of motor generator required to prevent the light flickering problem. These modifications were expected to take six to eight weeks; thereafter, a determination would be made whether or not the power plant could be used as an interim backup power source, and what needed to be done to achieve a permanent solution to the problem.³⁷ ADCOM followed progress of the modification program during September and late in the month informed HQ USAF that since the test and modification period could last to 9 November, so also would the dual operation with the East Coast FSS-7s.³⁸

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despite the increased attention given the power problem in the late months of the year, however, modification of diesels, and new problems

with the mechanical condition of the engines, prevented final testing during that time and the year ended with PAVE PAWS I still in a non-operational status.⁴¹

With Otis still "red," the Fuzzy-7s had to stay "green." The Fort Fisher and Charleston sites, which were to be closed in June, were still operating at the end of the year. The delay was expensive for ADCOM in direct costs (\$87,000 a month), in TDY by augmentation personnel from throughout the command, and in personnel hardship caused by the indefinite delay.⁴² These problems did not result in a decline of systems availability, however, and in a Christmas message General Hill expressed his appreciation.⁴³

1. A year ago no one thought we would still be operating the Fuzzy-7 radars at Fort Fisher and Charleston. The fact that Fuzzy is still up and operating is another in the long line of tributes to the dedicated men and women who have given so much of themselves over the years to make and keep Fuzzy green. None of those who have gone before, however, are more deserving of our appreciation than are those who are serving at Fort Fisher and Charleston today; both those who had their PCS plans disrupted and those who because of necessary TDY will be away from home and loved ones this holiday season.

2. Please extend to the members of your command not only my appreciation but also that of all the officers, men, and women of NORAD for the particularly singular contribution your people are making to the defense of our nation during the holiday season. We will continue to press here for a speedy resolution of the problems which have extended your closure dates; but, in the meantime, until national defense takes a holiday, neither can Fuzzy.

Perimeter Acquisition Radar Attack Characterization System (PARCS)

The PARCS was a phased array AN/FPQ-16 radar built by Concrete, North Dakota, in the early 1970s as the nucleus of the United States Army's Safeguard antiballistic missile (ABM) system. When it was decided not to proceed with an operational ABM

system, PARCS was offered to the Air Force as a missile warning and space surveillance and tracking radar. Work by the Army and the Air Force on a transfer agreement began in early 1976, and the system was modified for the ADCOM mission during 1977. ADCOM accepted PARCS from the Army on 3 October 1977. The system had some unique characteristics, but added little to the command's total capabilities: it provided only marginal ICBM warning benefits, and the radar's ICBM data would only reconfirm attack characterization data from other existing and planned systems. Site Operations and Maintenance costs were also high. As late as December 1978 the command went on record as reaffirming it had no future requirement for the system.⁴⁴

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The com-

mander of AFSC, General A. D. Slay, notified General Allen in early January 1979 that he and General Hill had reviewed plans for EPARCS and they had concluded its location limited its ability to provide adequate warning of low angle trajectory ICBM reentry vehicles, and its relatively high acquisition and support costs did not justify its use for the interim until BMEWS was modernized. They therefore recommended it be cancelled "as it does not appear to represent a good return on investment."⁴⁶ General Allen replied on 10 March that after a "thorough scrub of the EPARCS program . . . [and] in light of this evaluation as well as the strategic, political, and technical factors, I have concluded that we should go ahead with the program."⁴⁷ AFSC then said it would accelerate efforts to conclude the design configuration phase of the project by 1 May and then initiate the procurement phase.⁴⁸

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Earlier, in December 1978, ESD had briefed the AFSC staff and HQ USAF representatives on the concept definition phase of EPARCS (a contract with Bell Telephone Labs for \$2 million), and the upcoming acquisition and modification phase (Phase II), projected to cost \$27.8 million and take 23 months to complete.⁵⁰ Since only \$15 million was available for

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this phase, AFSC directed the program office to prepare a plan which fit that amount. Work ceased temporarily while AFSC awaited Air Staff reaction to its recommendation to terminate EPARCS, but with the early March direction to proceed, AFSC directed the project office to prepare such a program.⁵¹ HQ USAF subsequently requested the final configuration be pursued in three phases to make it compatible with approval of FY-80 and FY-81 budget requests.

HQ USAF replied with assurance that the \$20 million program would contain all the features ADCOM had identified.⁵⁴

The EPARCS program briefed to USAF 17 May and reflected in a change to the Air Force Program Management Directive for the system in early June called for a \$13 million design-to-cost program (Phase II) for the basic work of extending the range of PARCS, and a \$5 million option for enhancements. Two million had been spent on the contract definition phase. Total cost then was \$20 million.⁵⁵ In September, the Bell Telephone Labs was awarded a contract for Phase II.⁵⁶ The PMD called for the work to be completed by December 1980. This schedule seemed threatened in early 1980 by a delay in the release by the Congress of \$5 million appropriated in FY-80.⁵⁷

Defense Support Program

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Ground Processing Stations.

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* The MPF was used for analysis, training, and software development and testing. It would receive an antenna.

** The OSM would be converted from a logistics support module into an operational support module using SPS hardware and software.

*** OLAE of the 46 AERODW, ADCOM, was located at Cornhusker and consisted of about 60 personnel.

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CHAPTER III

SPACE

Space Detection and Tracking System (SPADATS)

The SPADATS mission during 1979 remained to detect, track, identify, and catalog all man-made objects in space (see chart, p 101), to provide sensor information on foreign space activity to CINCNORAD, and to support other Canadian and U.S. space agencies as required. It consisted of a world-wide network of dedicated, collateral, and contributing sensors (see map and list of sensors on following pages). Dedicated sensors were those with a primary mission of SPADATS support, collateral sensors were those NORAD sensors whose primary mission was other than SPADATS, and contributing sensors were non-NORAD military and civilian sensors which were under contract or agreement for part-time support of SPADATS. There were only two changes in the lineup of sensors during the year. The missile and satellite tracking system at TUSLOG Det 8, Diyarbakir, Turkey, which had resumed 24-hour operations on 24 November 1978 after being down for more than three years, was designated, along with the Cobra Dane radar at Shemya, Alaska, as a multi-mission sensor (intelligence, missile warning, and SPACETRACK). It therefore became a collateral rather than a dedicated SPADATS sensor.¹ Also, on 29 August the Maui, Hawaii, Optical Tracking and Identification Facility (MOTIF) was transferred from the Advanced Research Projects Agency (ARPA) to ADCOM. Thereafter, its status was as a dedicated USAF SPACETRACK sensor rather than a contributing sensor.

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Operating Location AA (OLAA) of the 46 AERODW was activated 1 April 1979 to operate the site. Upon implementation of the ADCOM reorganization the unit was transferred to SAC.³

Planned Improvements

The Pacific Radar Barrier (PACBAR).

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THE NORAD SPACE DETECTION AND TRACKING SYSTEM (SPADATS)

1979

<u>Site</u>	<u>Unit</u>	<u>Equipment</u>
Cheyenne Mountain CO	NORAD/ADCOM Combat Operations Center	Space Computation Center
Cold Lake, Alberta (SATTU)	Canadian Forces	Baker-Nunn Optical Sensor
St Margarets, New Brunswick (SITU)	Canadian Forces	Baker-Nunn and 24" SOI Telescope
Dahlgren, VA and 8 southern U.S. sites from CA to GA	U.S. Navy Space Surveillance System (NAVSPASUR)	Computational Center, 3 transmitters and 6 receivers

USAF SPACETRACK SYSTEM DEDICATED SENSORS

Edwards AFB, CA	Bendix Field Engineering Corp and Joseph Nunn Associates (contractors)	Baker-Nunn Optical Sensors (telescope-camera space observation system)
Sand Isl, Johnston Atoll		
San Vito AS, Italy		
Mt John, New Zealand		
Maui, Hawaii	OLLA, 46 AERODW	Maui Optical Tracking and Identification Facility (MOTIF) (Electro-optical)

CONTRIBUTING SENSORS

Ascension Island	Air Force Eastern Test Range (AFETR)	FPQ-15 Tracking Radar
Antigua Island	AFETR	FPQ-14 Tracking Radar
Kaena Point, HI	Air Force Western Test Range (AFWTR)	FPQ-14 Tracking Radar
Kwajalein Atoll	Pacific Missile Range	Tracking Radar
Millstone Hill, MA	MIT Lincoln Laboratory	Tracking Radar
White Sands, NM	MIT Lincoln Laboratory	GEODSS Optical Sensor prototype model

<u>Site</u>	<u>Unit</u>	<u>Equipment</u>
Cloudcroft, NM	SAMSO	Optical Sensor
Malabar, FL	AFETR	Optical Sensor

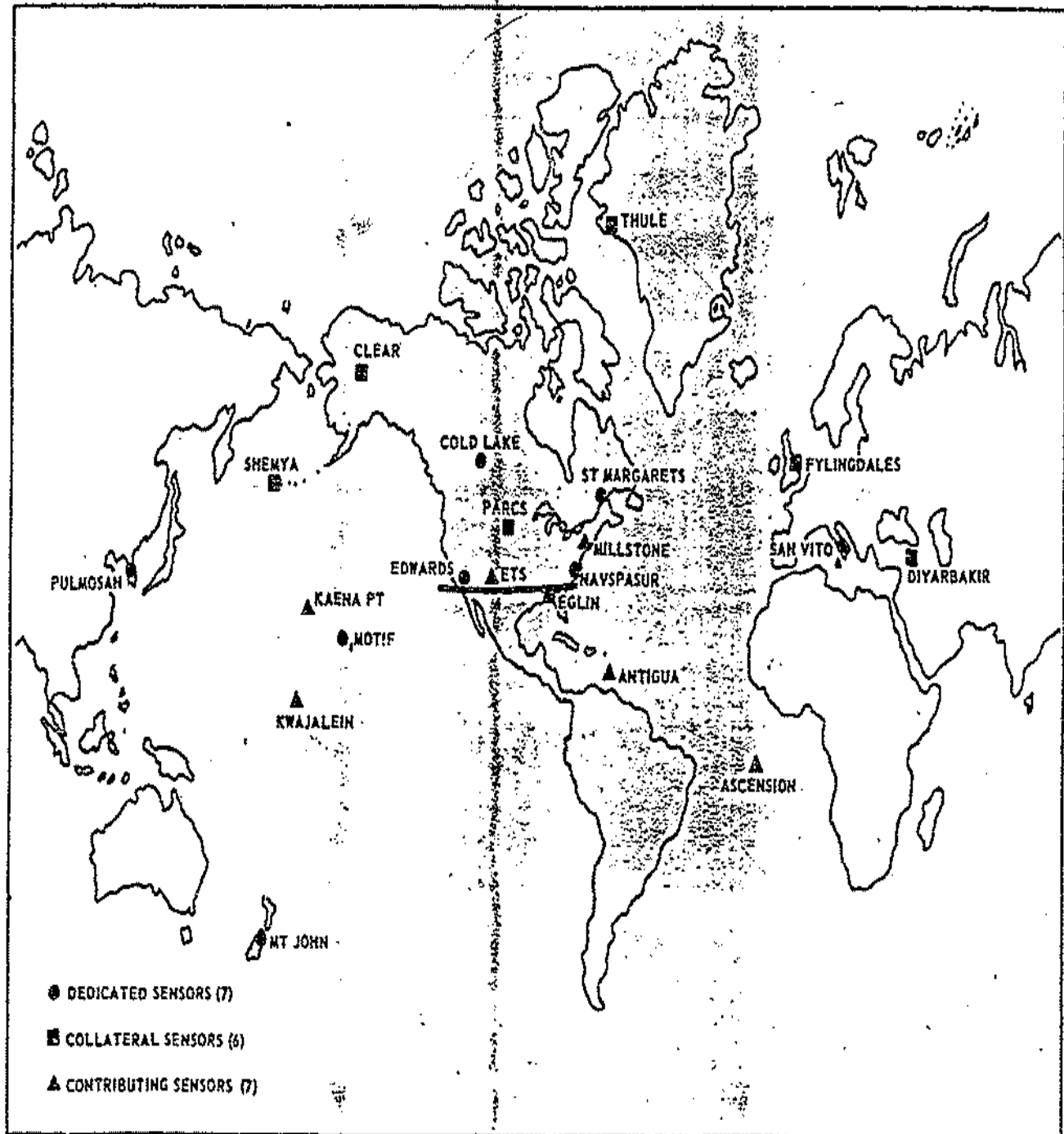
The Smithsonian Astrophysical Observatory network of 11 Baker-Nunn cameras and the National Aeronautics and Space Administration also provided data.

COLLATERIAL SENSORS

Pirinclik CDI, Diyarbakir, Turkey	19th Surveillance Squadron (TUSLOG Det 8)	AN/FPS-17 and AN/FPS-79
Shemya AFB, Alaska	16th Surveillance Squadron	FPS-17 Detection Radar (ceased operation 1 August 1977) FPS-80 TR (ceased) operation 1 August 1977) FPS-108 Phased Array Radar (IOC achieved 13 July 1977)
Clear AFS, AK	Ballistic Missile Early Warning System (BMEWS)	1 FPS-50, 1 FPS-92
Thule AB, Greenland.	BMEWS	1 FPS-50 Detection Radar, 1 FPS-49 TR
Fylingdales, U.K.	BMEWS	3 FPS-49 TRs
Eglin AFB, FL	20th Msl Wrn Sq, SLBM Wrn System, Alternate SCC	FPS-85 Phased Array Radar and peripheral data processing equipment
Concrete, ND	Perimeter Acquisition Radar Attack Characterization System (PARCS)	Phased Array Radar (FPQ-14)
Satellites	Defense Support Program	

SOURCE: NORAD Forces and Program Change Summary (S-Revw-Jan 2000), 1 Jan 80 (Material used unclassified).

SPACE DETECTION AND TRACKING SYSTEM (SPADATS)



SPACE OBJECT DATA

	Objects Catalogued	Launches	Pay-loads	U.S. Pay-loads	USSR Pay-loads	Other Nations	Objects Decayed	Net Gain Over Previous Year
1974	579	106	122	20	91	11	-	132
1975	929	125	151	28	109	14	-	431
1976	1,117	128	161	32	122	7	-	445
1977	902	124	136	19	105	12	523	379
1978	629	124	161	30	119	12	520	109
1979	474	106	123	17	101	5	549	75 (net loss)

SOURCE: Ltr, Lt Col T.J. O'Rourke, Ch Tech Data & Systems Div, NCOC, to Hq NORAD/PAM, "Information on 1979 Space Activities," 4 Jan 80 (Doc 261).

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In 1978 the U.S. Navy Communications Station at San Miguel, in the Philippines, had been selected as the best site for location of the AN/GPS-10 radar which would constitute the western sector of PACBAR. The radar had been in storage at Clark AB since being removed from Thailand in 1976. Efforts to gain approval for the installation were protracted initially when the issue was included in the base rights agreement being negotiated between the two governments, but by late 1978 the Air Force was successful in getting it removed from the larger issue. [

b1 [] By the end of the year a plan presented by General Electric, builder of the GPS-10, for reinstallation of the radar had been agreed to by ADCOM and Hq USAF, and a work schedule concurred in.⁴

In early January 1979, Hq USAF advised Hq PACAF that the San Miguel site was the only acceptable one and requested it to ask Commander in Chief, Pacific (PACOM) to insure that the necessary negotiations between the U.S. Embassy in Manila and the Philippine government were completed.⁵ Although PACAF urged that host country coordination be completed by June, Hq USAF wanted authority to proceed in its hands by March. . . . to be consistent with the b1 directed by the SecDef." Air Force said also that the anticipated ADCOM reorganization should not delay the negotiations. The Philippines should be told that if the realignment went through, SAC would be the resource manager of the site, but the radar would support missions under CINCNORAD/CINCAD's operational control.⁶ The USN and PACOM raised certain questions, however, regarding electromagnetic compatibility (EMC) of the radar with communications equipment operated by the Navy and about protection against possible radiation hazards in the area of the radar. PACOM said it had no record of a USAF/USN analysis of the EMC hazard at San Miguel,

and so it held negotiations in abeyance until one was concluded.⁷ Although a draft memo of agreement was coordinated by ADCOM in late April, the memo did not become official until 17 August. The Air Force agreed to install mechanical devices on the GPS-10 which would prevent electromagnetic interference with Navy communications equipment, and it would be responsible for identifying any radiation hazard zones relating to the radar and providing the necessary protection.⁸ At the end of 1979 there remained only the task of acquiring approval from the armed forces of the Philippines and the Government of the Philippines in order to proceed with the contract for relocation of the radar, but they had not yet been approached by the Air Staff.

The radar installation on Kwajalein Atoll, the eastern anchor of PACBAR, encountered not political but funding problems. Preparations by contractors engaged by the U.S. Army, in anticipation of modifying the ARPA Long Range Tracking and Instrumentation Radar (ALTAIR) on Kwajalein to function as a SPADATS sensor, had been halted in October 1978 when FY-79 funds were frozen by the Office on the Undersecretary of Defense, Research and Engineering. Responsive to the concerns of Mr. Robert Yost of that office, on 6 April 1979, ADCOM, ESD, SAMSO, and Lincoln Laboratory briefed him on ALTAIR's dual capabilities as deep-space sensor and a low altitude PACBAR sensor. The OSD subsequently released modification funds early June (\$1.1 million in FY-79 money). GTE, Sylvania, with the assistance of Lincoln Laboratory, would modify the radar. When the work was completed, estimated in September 1981, the U.S. Army would operate the radar in support of Western Test Range launches and in response to ADCOM's high and low altitude space tasking.⁹

Ground-Based Electro-Optical Deep Space System.

GEODSS offered near term improvement in deep space detection and tracking. Plans called for a network of five sites--one in the U.S. and four overseas--located at roughly equal intervals around the globe. Each site would use 3 telescopes, TV cameras, a digital computer, and related electronic and communications equipment. With near real time equatorial coverage at geosynchronous, it promised substantial improvement over the 20 year old Baker-Nunn cameras, the system it would replace. Like the Baker-Nunn system, however, GEODSS operations would be confined to

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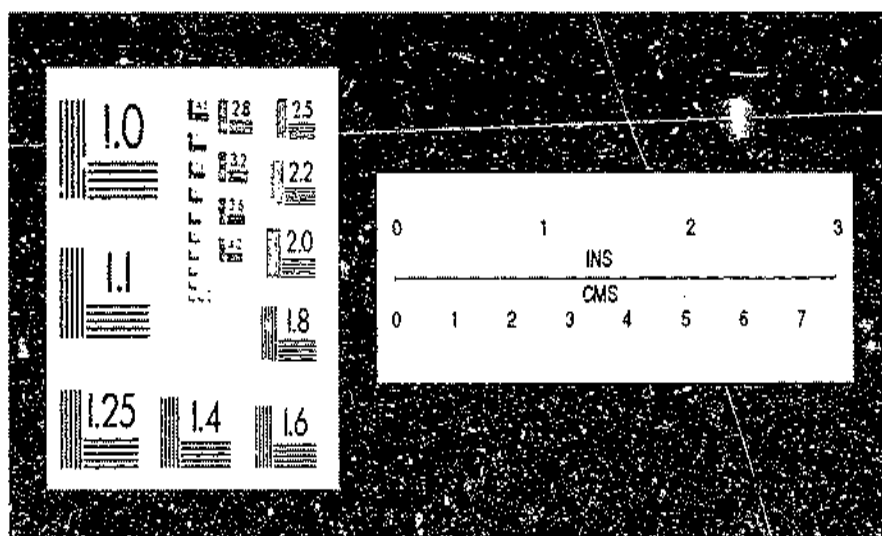
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times when the camera was in darkness and the object viewed was illuminated by sunlight, and when there was no cloud cover. Only a future space-based sensor would not be so limited.

The CONUS GEODSS location, at Stallion, New Mexico, was established as an experimental test site (ETS) in 1975 for development by MIT/Lincoln Laboratory of system technology. ADCOM personnel, organized as an operating location of the 26th Air Defense Squadron, began manning the facility in 1977 to train, provide interim operation of test sensors, and to develop operating procedures for use at future sites. On 15 May 1978 Thompson-Ramo-Woolridge (TRW) Corporation was awarded a contract for three GEODSS sites and on option to build two more. Equipment, installation, and testing for three sites would cost \$33.04 million; the cost of five sites (to include operations and maintenance through the first quarter of FY-83) would be \$62 million. TRW's efforts to date in the design and management of the operational GEODSS had been, in ADCOM's estimation, very satisfactory. No problems threatened the planned turnover date of April 1981 for the New Mexico site. The second and third sites, in South Korea (near Taegu), and on the island of Maui, Hawaii, were planned for turnover in July 1981 and January 1982.* That schedule also remained firm.¹⁰ The fourth and fifth sites, on the other hand, presented substantial problems of site location, and this tended, in turn, to delay funding.

* Maui had earlier been the fourth site and Morocco the third, but they were switched in early 1979 when Moroccan approval was delayed.


 SAC, who acquired resource management responsibility for the system from ADCOM on 1 December as a result of the reorganization, recommended the island of Diego Garcia, in the Indian Ocean, as the fifth site.¹⁵

Skylab's Fall

The National Aeronautics and Space Administration's Skylab, an orbital workshop, was launched 14 May 1973. During the next year it hosted several astronaut teams. By early 1974 all its scheduled objectives had been completed and the station was abandoned.¹⁶ NASA expected the 77.5 ton satellite to remain aloft until 1983, but greater than predicted sunspot activity, which caused the earth's outer atmosphere to expand and slow down orbiting objects, speeded up the decay of Skylab's orbit. NASA prepared plans to have an astronaut from the space shuttle attach rockets to Skylab's hull so that the vehicle could be moved into a higher orbit and preserved a while longer; but the shuttle program was delayed, and Skylab couldn't wait.¹⁷ In August 1977, NORAD, at the request of NASA's Marshall Space Flight Center, performed an independent lifetime expectancy study on Skylab and predicted it would reenter the Earth's atmosphere between June 1979 and April 1980. NASA's efforts to reposition the vehicle to reduce drag were not very successful, and the space station sunk closer to Earth.¹⁸ NASA calculated 38 large parts totaling about 40,000 pounds might survive reentry. The largest piece weighed 5,000 pounds.¹⁹ NASA and the Air Force emphasized the small odds of such debris striking or killing anyone. An official news release stated: "The area over which Skylab is orbiting is approximately 75 percent water and 98 percent of the land mass has less than one person per acre."²⁰ The area lay between 50 degrees north latitude and 50 degrees south latitude. Looking at it a different way, one magazine calculated 90 percent of the world's population lived between those latitudes and were thus in Skylab's path.²¹ By February 1979, NORAD's decay

prediction had been narrowed to between April and September.²²

While the media grew increasingly speculative about the possible consequences of Skylab's fall, and public interest in the event heightened and sometimes took curious forms of expression,²³ NASA began its preparation by conducting two exercises simulating Skylab's entry. One, in April, used the actual reentry of a Soviet rocket body; and the other, in June, was a pure Skylab simulation. They tested the readiness of all in NASA and the DOD who would be involved in the real event.²⁴ NASA, by agreement with the DOD and interested civilian agencies, would be the overall controlling agency for Skylab decay. Besides NORAD tracking and impact prediction reports, the DOD would provide logistics, transportation, medical, engineering, and communications support should it be called upon.²⁵ The JCS requested NORAD support NASA with reentry predictions in the same manner it had for COSMOS 954, the Soviet satellite which had impacted in Canada in early 1978.²⁶ The Space Defense Center could call upon NORAD's regular Space Detection and Tracking System (SPADATS) and other DOD and NASA radars would be available as reentry time drew near. NORAD Satellite Situation Reports (NSSR) were issued on a weekly basis beginning 5 April, and a week before entry they were issued daily. The 5 April NSSR said: there was a 90 percent probability of Skylab decaying between 10 June and 13 July, and a 50 percent chance it would decay by 22 June.²⁷ On 20 June NASA reoriented Skylab into a sideways position to provide more stability as it neared reentry, and to permit last minute course changes if inhabited areas seemed threatened. The lab's decay was also accelerated because of the increased drag that altitude created. NORAD now predicted 90 percent chance Skylab would decay between 10 July and 20 July, with a 50 percent chance it would decay by 15 July.²⁸

As reentry time drew near, SPADATS was augmented by other DOD and NASA systems, and even four French sites. Twenty eight sites in all provided over 300 observations a day. Eleven hours before reentry the Space Defense Center issued a prediction (plus or minus two and one-half hours) which indicated the satellite impact area could be in eastern North America rather than in the Atlantic Ocean as earlier predicted.²⁹ NASA then ordered the on-board computer to fire the craft's small maneuvering rockets, putting the vehicle into a tumbling motion. This would reduce drag and put the impact point back out in the ocean.³⁰ Based on cal-

culations with the vehicle in its new attitude, the Space Defense Center six hour calculation placed splash down in the North Atlantic; but the margin of error was still 72 minutes or plus or minus 207,000 miles.³¹ The one hour prediction had the satellite breaking up south of Africa in the Indian Ocean at 1626Z, 11 July, plus or minus 26½ minutes or 8,000 miles.³² On its 34,981st and final orbit Skylab moved out of the Pacific, passing over Seattle, Washington; sped over the northern part of the U.S.; moved out over the Atlantic; and took a path between North and South America and Europe and Africa. NASA's Bermuda tracking station reported the lab still intact. Ascension Island, in the Atlantic south of the Equator, then acquired the track and followed it as the satellite moved around the southern tip of Africa into the Indian Ocean. The lab had proved surprisingly durable, but it was now descending rapidly.³³ Glowing with the heat of reentry, Skylab moved away from the tip of Africa and its major predicted impact point and closer to Australia. Ascension reported it had lost the signal, then a NORAD sensor reported debris falling in the Indian Ocean, southwest of Australia, and moments later visual sighting began to come into the Space Defense Center and NASA. Perhaps the most graphic description came from an air line pilot flying northeast of Perth: "We saw what we believe was the reentry of your Skylab. . . . It had lights and a distinct blue glow, almost like aircraft headlights. I had the impression it had a box shape. As it descended further it changed from a bright blue to an almost orangey red and you would see the break-up starting to occur. . . . As the break-up continued, it finished up as a very bright orange ball in the front end and remainder in the behind giving off sparks and you could almost detect the metal or whatever was falling down to earth. It has a very long tail, perhaps several 100 miles long."³⁴ Official confirmation that Skylab was down came when radars in the Pacific, in North Dakota and Virginia failed to pick up the satellite. NORAD then provided NASA its last tracking and impact prediction that Skylab decayed in the earth's atmosphere over the Indian Ocean and southwest Australia at 1637 Zulu time, creating a corridor 1,200 miles long and 100 miles wide. Debris from the shattered satellite which survived reentry fell within that footprint.³⁵ Parts which fell on land came down in the Australian Outback, one of the most sparsely populated regions on Earth. For a brief time such strange sounding places as Kalgoorlie, Ballandonia, Rawlinna, and Noonoonia were prominent in the news; but the falling debris caused no loss of life or injury and only negligible property

damage.³⁶ Skylab decayed within 11 minutes of the time predicted by the Space Defense Center's Reentry Working Group in its estimate made one hour before reentry. The precision and accuracy of the Group's decay prediction work was recognized by NASA, the Secretary of Defense, and the Chief of Staff, USAF. Tangible recognition came to Lt Col Terence J. O'Rourke and Major Thomas J. Cross when they were awarded the NASA Exceptional Service Medal later in the year.³⁷

The Issue of "Blue Suit" Launch

The 10th Aerospace Defense Squadron (AERODS), Vandenberg AFB, California, had the mission of launching military weather satellites in the Defense Meteorological Satellite Program (DMSP).

ADCOM took pride in the performance of Air Force's only "blue suit" launch team, and was anxious to identify future missions for the unit, perhaps in connection with the antisatellite program.⁴⁰ Developments during 1979 made it certain that if the Air Force chose to maintain a "blue suit" launch team in the future, an uncertain prospect, it would function under the aegis of SAC and not ADCOM.

) In 1978 it had been determined that the weight growth of future DMSP satellites would not permit their being launched by the Thor missile. SAMSO had recommended the program be switched to bigger ATLAS boosters launched by a contractor team. ADCOM opposed such a move for several reasons, perhaps the most significant of which was the threat it posed to the mission of 10th AERODS. Generals Hill and Slay (AFSC commander) apparently resolved the issue to ADCOM's satisfaction and it was agreed DMSP would continue to be launched using Thor until the Space Shuttle took over the satellite's mission.⁴¹ Anxious that the squadron's authority in such matters not be diluted, General Hill responded with concern to Lieutenant General R.C. Henry upon learning in early 1979 that the SAMSO commander had directed the 6595th Space Test Group be the single SAMSO connection with the 10th AERODS on DMSP matters. Since such direction seemed to prevent the squadron's com-

mander from working directly with SAMSO program officers and contractors, and in effect removed him from the decision-making process, General Hill thought SAMSO and ADCOM should review the existing memo of agreement between them regarding DMSP and asked for a meeting in late March.⁴² Such a meeting was preempted, in effect, by a gathering of ADCOM and AFSC representatives on 17 April, one which SAMSO declined to attend. Jurisdictional issues and command prerogatives were discussed at length, and agreement was reached that better communications between the two commands was needed, but no action was taken to better define the responsibilities of each in running space launch services.⁴³ ADCOM and SAMSO did not meet to consider a new MOA, but the ADCOM DCS Operations and SAMSO Vice Commander agreed the 8 November 1977 MOA would remain in effect until it could be revised and agreed upon.⁴⁴

Another perceived threat to the continuance of a "blue suit" launch capability arrived in March in the form of a revised Program Management Directive for DMSP, replacing one dated 7 November 1977. Deleted was the requirement that military personnel conduct launch and orbital operations. Also, AFSC was given joint responsibility, with ADCOM, for field check out and launch of DMSP satellites, thus further complicating, in ADCOM's opinion, issues of jurisdiction and command prerogatives. Fueling ADCOM's concern was direction in the new PMD for development of two advanced new DMSP sensors. Earlier discussions about these heavier satellites in late 1978 had caused SAMSO to recommend transfer of DMSP operations to contractor operated ATLAS E/F launchers.⁴⁵ ADCOM told Hq USAF that it considered these changes "detrimental to the Air Force space launch mission."⁴⁶ Hq USAF continued to consider several options and on 10 July the Directorate of Space, DCS Research and Development asked AFSC and ADCOM to identify any advantages and disadvantages, other than cost, of transferring DMSP to the ATLAS launch vehicle.⁴⁷ ADCOM's lengthy reply addressed pros and cons of the issue, but went into some detail on what the command believed was the real issue: whether or not the Air Force needed to retain a military space launch capability. ADCOM recalled that twice before a conscious decision had been made to retain it: in 1975 when the prototype ASAT Program 437L was terminated, and again in late 1978 when General Slay and Hill had agreed the DMSP program baseline would be maintained and no more sensors would be added until DMSP transitioned to the Space Shuttle. ADCOM also emphasized

that the Air Force, in AFM 26-1, had tied together space policy and military operations for space launch and space defense, and had directed use of military personnel in combat, and direct support; thus national and military policies had established the requirement for military involvement in space. Present and possible future missions for 10th AERODS were discussed. Recognizing the advantage of satellite growth potential offered by using the ATLAS, ADCOM still believed the loss of "blue suit" launch capability with DMSP (unless other missions were assigned), and total dependence upon aerospace contractors, to be of more serious consequence. ADCOM recommended to Hq USAF that the status quo be continued, i.e., continuance of DMSP/Thor operations to maintain a military space launch capability and to guarantee its existence until DMSP transitioned to the Space Shuttle.⁴⁸

No decision was immediately forthcoming, and in accordance with provisions of the ADCOM reorganization on 1 November 1979 the 10th AERODS was inactivated and its assets and people integrated with those of the 394 Test Maintenance Squadron, First Strategic Aerospace Division, SAC, at Vandenberg AFB.⁴⁹ It is not appropriate to speculate here on what position that command will take with regard to the issues surrounding Thor versus ATLAS for the launch of DMSP and the most basic issue of continuing to maintain a military launch team. Certainly the issues had been defined during 1979, but no progress was made toward their solution. Late in the year the DMSP Systems Program Office of AFSC's Space Division briefed the ADCOM staff on an acoustics problem which had developed with Thor boosters caused by the growth of the satellites weight and the additional thrust required to put it into orbit. Of the five options offered for its correction, only one, launching DMSP from ATLAS and deactivating the "blue suit" launch capability represented a cost savings.^{*50} General Hill wrote the AFSC commander, General Slay, that while he understood the

* Others would redesign and requalify the satellite and continue launching it on Thor; modify the Thor satellite launch complex (SLC-10W and stay on Thor; move the operation to SLC-2W and stay on Thor; and launch DMSP on ATLAS at SLC-3 but still maintain a blue suit launch capability).

technical problem of satellite weight growth had necessitated a search for alternatives, he thought such an endeavor should not be linked with the issue of continuing a "blue suit" launch capability. He reminded General Slay of their mutual efforts during the previous fall to disentangle the two questions. Hill's position remained as follows:⁵¹

"I continue to firmly believe that it is in the Air Force interest, as we enter the decade of the '80s, to maintain a 'blue suit' launch capability. But, at the same time, I am not 'hard over' on that capability being exclusively tied to Thor DMSP support. There may well be other missions that offer a better payoff for using this 'blue suit' talent; we should look at this now and proceed to make it happen."

Consolidated Space Operations Center (CSOC)

Once they were in orbit, all U.S. military satellites were monitored and controlled by the Satellite Test Center, a part of the Air Force Satellite Control Facility, Sunnyvale, California, a subordinate organization of Space and Missile Systems Organization (SAMSO). No other control center existed which could assume its functions, and so loss of the Sunnyvale Facility would result in an eventual loss of control over U.S. space systems. By early 1979, therefore, the Air Force had approved another control center, it had been budgeted for, and initial site surveys had been made. Plans called for construction to begin in FY 81, with achievement of an initial operating capability in June 1984.⁵⁴

Air Force surveys eventually considered 12 possible locations for the facility which would house the Consolidated Satellite Operations Center (SOC) (the new name for the Satellite Control Facility) and the Shuttle Operations and Planning Center (SOPC). Peterson AFB was among those surveyed, but its lack of land for the facility and expansion potential, primarily, prevented it

from being favorably considered.*⁵³ Kirtland AFB, New Mexico, was the location recommended to Undersecretary of the Air Force Dr. Hans Mark in the middle of May 1979. Dr. Mark reportedly felt that the nature of the siting criteria used prevented a clear choice of Kirtland or any other sites surveyed. He asked that the criteria be re-examined and that consideration be given to consolidating three space control facilities--the SOC, the SOPC, and the NAVSTAR Global Positioning System Control Center**--into one Consolidated Space Operations Center (CSOC). In consideration of Dr. Mark's guidance, AFSC tasked SAMSO to make another review.⁵⁴ Four principal candidates emerged by early July: Kirtland, Luke, Malmstrom, and Peterson AFBs.⁵⁵ Subsequently, TAC's concerns about the effect on its training mission at Luke AFB of locating the CSOC there resulted in its removal from consideration. Then there were three.⁵⁶

Conceptual operational planning for the CSOC proceeded concurrently with base survey efforts. In the middle of June, Dr. Mark asked the Air Force for a concept of operations for the CSOC. Prepared within the month by a joint group consisting of Hq USAF, ADCOM, SAC, and SAMSO representatives,⁵⁷ the "CSOC Operations Management Concept" listed the three control functions to be performed:⁵⁸

~~SOPC:~~ Primary control of Shuttle for national security missions (military and intelligence).

* Survey guidelines specified the facility would be placed on government land, and Peterson did not have sufficient land available for the initial facility or for possible growth. In addition, base facilities were judged insufficient. Also, a potential hazard would exist if the facility were placed on Peterson because electromagnetic radiation (EMR) emanations from its antennas could affect military and civilian aircraft landing nearby.

** NAVSTAR GPS, under development in 1979, would be a network of 24 satellites which would provide extremely precise positioning and navigation information worldwide to both U.S. military and civilian agencies such as FAA. SAC was expected to put the system into operation in 1987.

Would perform flight planning, training, readiness, command and control as the primary facility. Back-up capability for national security missions would be through the Controlled Security Mode at Johnson Space Center.

SOC: Primary control of operational military satellites and compatible with the Satellite Test Center (STC) at Sunnyvale, California, to provide back-up capability. The STC would be the primary control facility for R&D military satellites.

GPS, NCC: Would be the mission control center in the SOC portion of the CSOC for control of GPS satellites.

According to the Management Concept, NORAD/ADCOM's Space Defense Operations Center (SPADOC) would link the CSOC and other space users (federal agencies and owners of commercial satellites).

In its efforts to influence the basing decision in favor of Colorado Springs, ADCOM emphasized the future operational and long term cost benefits of having the CSOC in proximity to the SPADOC. It felt the criterion of considering only federal land for the facility too restrictive; and it emphasized to AFSC and Hq USAF that about 500 acres of land was available east of Peterson AFB, far enough away from the air traffic pattern to meet EMR hazard criteria, which could be acquired at about \$600 to \$700 an acre.⁵⁹ Nonetheless, when the survey team visited the three bases again in September to bring up to date data collected earlier, the result was again favorable to Kirtland AFB. Peterson met most of the criteria, but if the facility had to be located on federal land, the base was still deficient in that regard.⁶⁰ Plans at the time called for Dr. Mark to make his decision by late September, and public announcement would be made on 1 October. On 25 September Dr. Mark, the Air Force Chief of Staff, the Vice Chief of Staff reviewed the latest survey, but no decision was made pending resolution of several questions raised in the briefing. Most significantly, the Vice Chief of Staff asked CINCAD to consider further the operational considerations of the site selection.⁶¹ General Hill replied that location of the CSOC in Colorado Springs offered operational effectiveness through collocation and a supporting

organizational structure in the Cheyenne Mountain Complex. Hill observed Kirtland had been preferred because existing facilities were available and construction costs were low, and added "... this conclusion was unfortunately devoid of any operational considerations or long-term cost benefits." The CINCAD examined at length the operational advantages of internetting and perhaps functionally integrating the soon-to-be operational SPADOC and the future CSOC, together with the growth potential such an arrangement would have, and concluded these considerations outweighed the near-term cost savings to be realized by placing the facility at Kirtland. He also noted that the CSOC Management Concept emphasized close coordination between the SPADOC and CSOC. Thus if both were in Colorado Springs, integrated operational planning would be enhanced, coordination time minimized, and decision making optimized. General Hill concluded:⁶²

"... the location of the CSOC is a very important decision that goes well beyond the initial analyses. Although communications technology could provide a measure of connectivity between the SPADOC and CSOC from any of the proposed locations, the operational benefits I have described can only be gained by selecting Peterson over Kirtland or Malmstrom. Operational factors, including preserving growth and organizational options, must weigh heavily on the final decision."

And they did. Dr. Mark's decision, announced to the public on 20 December, said the CSOC would be located east of Colorado Springs on one of three parcels of land under consideration (two owned by the State of Colorado and one privately); and he emphasized the "unique operational advantages" of having the new facility near the SPADOC, since "As our national dependence on space for national security increases, a joining of the capability to control our satellites with ability to detect hostile actions against them will become increasingly important."⁶³ If the environmental impact analysis were favorable, no problems developed in the acquisition of the land needed, and funding was not delayed, construction would start in FY 82 and the IOC would be 1985. What organization would exercise operational control over the CSOC had not yet been decided.⁶⁴ Local reaction to the announcement was naturally quite favorable. Newspapers underscored the uplifting ef-

fect the Center's reported 2,000 military and civilian employees would have on the local economy, and one paper carried it as one of the top ten local stories of 1979. Senator Hart and Representative Kramer, who with the rest of Colorado delegation expressed satisfaction that their efforts had been successful, spoke of the military effectiveness and defense cost savings which would accrue as a result of the consolidation.⁶⁵ The Air Force was able to make its choice on solid operational grounds, while at the same time it achieved a counterbalance to the closure of ADCOM and thus gave reassurance of a continued strong Air Force presence in the area.

Space Defense System Planning

Space Defense Operations Center (SPADOC)

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On 1 March Dr. Gerald P. Dinneen, Assistant Secretary of Defense (C3I), did indeed request the Air Force prepare a plan by 1 April for establishing a SPADOC by 1 July. It would be, Dr. Dinneen realized, only an initial SPADOC with limited capabilities since it would be constituted from existing ADCOM assests. It would grow as space defense capabilities and systems reached their operational state.⁶⁸ On 12 March, Hq USAF, in turn, directed ADCOM to prepare an Implementation Plan.⁶⁹ Since, as mentioned, work on such a plan had preceeded the request, a briefing presenting basic philosophy, operations concept, location of the facility, schedules, and manning requirements was quickly prepared and coordinated. The CINCAD approved the implementation briefing in the middle of the month, and on 29 March the Air Force Council concurred.⁷⁰ Dr. Dinneen approved it 30 April.⁷¹ An activation plan followed in July.⁷²

b(1) AFSPACECOM

b(1)-AFSPACECOM

Since the SPADOC would use 427M system computer terminals, and that system was not scheduled to achieve an equivalent operational capability until 30 July 1979, ADCOM planned to begin limited SPADOC operations on 1 October in lieu of 1 July as suggested by Dr. Dinneen. That date was acceptable, and although the 427M EOC subsequently slipped to 4 September, ADCOM was able to begin Phase I SPADOC operations on 1 October.⁷³ Nine of the 18 authorized crew members were available on that date, and by the end of the year a full complement of trained crews was available.⁷⁴ At the end of the year ADCOM staff support of SPADOC focused on negotiations to establish formal agreements with the owners and operators of U.S. military and civil satellites and allied space systems. When concluded, those agreements would specify the type of information regarding satellite status which would be sent to the SPADOC and the warning and attack verification information which would be sent to the NMCC and satellite owners and operators. SPADOC development would coincide with development of an antisatellite system. Phase II, to begin in 1982, would support development, test, and evaluation of an air launched miniature vehicle (ALMV). Phase III, a year later, would provide control of an operational ALMV and other ASATs. By the late 1980s SPADOC would provide the C³ structure tying together U.S. satellite warning and attack verification and negation of hostile satellites.⁷⁵

Antisatellite Program

b(1)-DOE

The Soviets had tested an ASAT as early as 1963. Between 1967 and 1977 they conducted 25 possible satellite interceptor tests, in 1977 two more, and in 1978 one. In early 1978 the Soviets were credited by ADCOM with the ability to negate low altitude U.S. space systems; and the Soviet Galosh antiballistic missile system had a limited nuclear ASAT capability.

b(3)-DOE

Renewed Soviet ASAT activity, however, plus a growing reliance by the U.S. on space based systems for a variety of military missions, and concerns expressed by CINCAD encouraged the JCS to seek the support of Secretary

of Defense Brown for an operational ASAT. Although the preferred U.S. policy was to conclude an agreement with the Soviet Union which would ban all ASAT activity, on 20 January 1978 Secretary Brown also directed the Undersecretary of Defense for Research and Engineering to organize a vigorous and comprehensive ASAT development program. A subsequent JCS memo on 1 May specified a need for an interim ASAT and suggested an IOC of 1983. Preliminary targets identified included satellites performing electronic intelligence, photoreconnaissance, ocean surveillance, communications, navigation, and meteorology.⁷⁶ On 4 May 1978 the Deputy Undersecretary of Defense (Policy) established an ASAT Task Force to analyze requirements.* Phase I of its study, completed in late September, established general requirements. Phase II, began in early March 1979, looked to the 1978-90 Soviet space threat and its effect on U.S. forces, and the effectiveness of various level of dollar investment for several mixes of surveillance, command and control, and satellite negation systems.⁷⁷ As planned in early 1979, the negation part of the system was expected to consist of an Air Launched Miniature Vehicle (ALMV), a backup ground launched conventional vehicle (a missile with a pellet warhead), a ground based high energy laser system, and an instrumented test vehicle (ITV) target to test accuracy.

~~.....~~ Air Force Systems Command development efforts during 1979 focused on the ALMV. The 35-pound payload would be launched from an F-15 and a two stage rocket would power it to altitudes up to 600 nm, where it would impact directly on the target satellite. According to the ASAT Program Management Directive of 19 June 1979, flight tests were to begin in 1982 and an IOC was scheduled for 1985. A limited operating capability would follow the Initial Operation Test and Evaluation phase, using residual research and development aircraft, missiles, miniature vehicles, etc. In case the ALMV encountered development or

* (U) The Study Group consisted of representatives from NSA, DIA, JCS, Undersecretary of Defense (Policy), NSA (Research and Engineering), Assistant SecDef (C3I), unified and specified Commands and the services. Maj R. Verduyck, ADCOM/XPDS, headed the Operations Requirements Working Group.

test problems, plans called for a backup ground launched system using the Spartan missile. This system would not be pursued beyond the development phase, however, unless the ALMV encountered difficulty. Lasers were the preferred future ASAT weapon. The Air Force Weapons Lab at Kirtland AFB was developing technology for a ground based laser (GBL) which could negate a satellite. A GBL capability was scheduled for demonstration in FY-84, with an operational system shortly thereafter. The ITV, test target for the ASAT weapons systems, would be designed and built by AVCO Systems Division. That company was awarded a contract in May 1979. Its concept called for a 6.5 foot balloon with a grid detection system to score hits and a short range radar for near misses.⁷⁸

ADCOM's contribution during the formative stages of conceptual planning for ASAT was to define operational requirements. Its Systems Operational Concept for the ALMV, produced in early 1979 and updated in July, made maximum use of existing organizations and communications systems. McChord AFB, Washington, and Griffiss AFB, NY, were tentatively selected as operational bases. One squadron of F-15s at each base would have a dual air defense-ASAT mission. CINCAD's operational direction would be exercised from a Mission Control Center in the Space Defense Operations Center (SPADOC) in Cheyenne Mountain, and go through two Region Operations Control Centers (ROCCS) to the F-15 squadron. In another extensive planning effort during 1979, ADCOM prepared a Statement of Operational Need (SON) for a Space Defense Negation System. It brought together into one document surveillance, command and control, and negation requirements previously submitted over the past two years in separate Required Operational Capability (ROC) documents. After coordination within the staff and with interested MAJCOMs, the document was forwarded to Hq USAF in December.⁷⁹ Also, responding to Hq USAF and AFSC requests for a description of required ALMV capabilities during the period when it would have a limited operating capability (roughly the period from FY-83, the end of IOT&E, to FY-85, achievement of an IOC), ADCOM clarified certain operational and support features of the prototype system. Either AFSC or TAC F-15s could be used, with maintenance provided by the owner. Maintenance of other equipment would be the responsibility of the operating command. After the reorganization of aerospace defense assets that command would be SAC. Contractor support should be minimized and concentrated on specialized equipment. The

Prototype Mission Operations Center (PMOC) should be located in Cheyenne Mountain and manned by ADC personnel. It would provide command and control of the system, to include mission planning and targeting. The Space Detection and Tracking System (SPADATS) and the ADCOM Intelligence Center would provide surveillance and intelligence support to the PMOC.

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ASAT requirements were more completely defined in late 1979 when preliminary results of the Phase II ASAT Requirements Study begun in March became available. They were briefed to General Hill on 31 October. Following are the briefing's major points as summarized in a DCS/Plans Background Paper prepared for CINCAD:⁸¹

1. Soviet space systems make a significant contribution to the flexibility, efficiency, and redundancy of Soviet armed forces. Low altitude space systems (electronic intelligence, photo, ocean surveillance, etc.) make the most significant contribution.
2. For most of their space systems the Soviets have terrestrial back-up capabilities to perform the same mission.
3. United States ASAT should be employed under the JCS Unified and Specified command structure.
4. United States commanders responsible for deploying ASAT require an integrated capability: the ability to locate, identify, track, and target satellites.
5. Rules for engaging foreign space vehicles should parallel those currently recognized for ships or aircraft in international waters and airspace.
6. A single commander should be vested with operational command of ASAT forces.
7. The operational requirements for the U.S. ASAT should be:

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In early December, General Hill responded to Admiral (Ret.) D. J. Murphy, Deputy Undersecretary of Defense for Policy Review, and the task force director, that he was impressed by the magnitude of the effort and the diversity of the research and analysis which went into the study. The CINCAD commented that he was in full agreement with one of the points of the briefing, that ASAT should be under a single commander; but he also noted that the study itself seemed to contradict that policy since it had been concerned with developing operational requirements, a responsibility normally that of a service or command. He thought "... uncertainty in the mission assignment for ASAT..." might account for the situation, but added the Unified Command Plan clearly assigned space defense to ADCOM, and traditionally that mission had included ASAT (e.g., CINCAD had exercised operational control of Program 437L).

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NOTES

CHAPTER I - MISSION, COMMAND, ORGANIZATION, AND RESOURCES

1. ADCOM Special Order G-205, 19 Oct 79. This order superseded SO G-180, 28 September 1979.

2. ADCOM SO G-241, 30 Nov 79; ADCOM SO G-240, 30 Nov 79.

3. ADCOM SO G-226, 21 Nov 79.

4. Air Force Regulation 23-9, "Organization and Mission-Field, "Acrospace Defense Center," 1 Dec 79 (Doc 1). The reader should be aware that while the regulation carries the 1 December publication date, it was still at the printers at the end of the year and was not distributed to the field until March 1980.

5. Msg (U), JCS (J-5) to CINCNORAD, "NORAD Agreement Renewal," 19/1310Z Jul 79.

6. Msg (U), NORAD (J-5) to JCS, "NORAD Recommended Changes to NORAD Agreement," 01/1545Z Aug 79 (Doc 2); Msg (C-Revw-99), CINCNORAD/CD to NDHQ, Ottawa, "Impending CDS-CINCNORAD Discussions," 31/2045Z Jul 79.

7. The Canadians had been unsuccessful in past efforts to obtain such access, and the deputy CINCNORAD, General Lewis, credited General Hill's "tenacious efforts" for achieving this partial victory. General Lewis told his government that he thought the new NORAD agreement should note the need for Canadian officers to have access to all classified information needed to carry out their responsibilities. ADCOM DCS/Plans officers were in complete agreement that unless the Canadians were given access to space systems capabilities, future joint planning would be impossible. (Msg (C-Revw-99), CINCNORAD/CD to NDHQ, Ottawa, "Impending CDS-CINCNORAD Discussions," 31/2045Z Jul 79; Staff Action Memorandum (U), "Canadian Access to U.S. Military Space Related Security Information," Col W. R. Kenty, Asst DCS/Plans and Programs, ADCOM, to XPD et al, 9 Nov 79.)

7. Msg, (S-Revw-99), CINCNORAD (CD) to NDHQ, Ottawa (ADM POL), "Renewal of NORAD Agreement," 13/2245Z Nov 79 (Doc 3).

8. ADC SO G-1, 1 Dec 79.

9. Nancy Johnson, "NORAD Chief Gen Hill to Retire," Colorado Springs Sun, 25 Aug 79.

10. Msg, (S/DG-C 19 Sep 81/Decl 19 Sep 85), SecState to AMEMBASSY Ottawa, "CINCNOAD Billet," 19/2318Z Sep 79 (Doc 4).

11. Msg, (C-ADS 21 Sep 81), AMEMBASSY Ottawa to SecState, "CINCNOAD Billet," 21/1614Z Sep 79; Msg (C-GDS 15 Dec 85) SecState to AMEMBASSY Ottawa, "Announcement of Appointment . . .," 15/1858Z Dec 79; Msg (C-Revw 00), AMEMBASSY Ottawa to SecState, "CINCNOAD Billet," 28/2009Z Dec 79 (Doc 5); Comment by Lt Gen K. E. Lewis, CD, in morning staff meeting 28 Sep 79 (historian in attendance).

12. Msg (S/DG-C 10 Oct 81/Decl 10 Oct 85), from SecState to AMEMBASSY Ottawa, "Meeting of Secretary Brown and Canadian Minister McKinnon," 10/1900Z Oct 79.

13. "Hart Opposes 3-Star General at NORAD," Colorado Springs Gazette Telegraph, 27 Nov 79; Msg (U), Hq AFSINC, Kelly AFB to AIG 508, "AF News Service Release," 21/1905Z Dec 79.

14. Assumption of command of Aerospace Defense Center by ADC Special Order G-3, 28 Dec 79; assumption of command of ADCOM (specified) by ADCOM SO G-265, 28 Dec 79; and assumption of command of NORAD by NORAD SO G-135, 28 Dec 79. All were effective 1 Jan 80. Biography of Lt Gen James V. Hartinger (Doc 6).

15. For discussion of the development of the reorganization study and planning to the end of 1978 see History of ADCOM (S-Revw 31 Dec 99), 1977-78, pp 6-24.

16. Hist of ADCOM, 1977-78 (S-Revw 31 Dec 99), p 22 (material used S-Revw 98); Msg (U), AFSSO USAF/PA to CINCPAC/CS, "Air Defense and Surveillance Realignment," for Gen Boswell from Gen Greenleaf, 04/2232Z Jan 79; Msg (S/DG-C-24 Dec 80/Decl 24 Dec 84), AMEMBASSY Wellington to SecState, "Reorganization of USAF Air Defense and Surveillance and Warning Systems," 22/0307Z Dec 78; Msg (C-Decl 20 Dec 84), USDAO London to SecState, "Reorganization of USAF Air Defense and Surveillance and Warning Systems," 27/1714Z Dec 78; Msg

(S/DG-C-21 Feb 81/Decl 21 Feb 85), AMEMBASSY Ankara to SecState, "Roles and Mission of SAC," 21/1145Z Feb 79; Msg (S/DG-C-21 Feb 81/Decl 21 Feb 85), AMEMBASSY Wellington to SecState, "Roles and Missions of the Strategic Air Command," 22/0405Z Feb 79; Msg (S/DG-C-13 Mar 81/Decl 13 Mar 85), SecState to AMEMBASSY Canberra, Rome, Ankara, Copenhagen, London, Ottawa, Reykjavik, Seoul, Wellington; et al, "Reorganization of USAF Air Defense and Surveillance/Warning Systems," 14/0027Z Mar 79. (S-Decl 15 Dec 84) ADCOM recommended the Philippines and Morocco also be notified of the proposed reorganization since space surveillance and warning sites would soon be established in those countries. Hq USAF replied that such discussions would be premature and should be conducted in the normal course of events leading to arrangements for manning sites in those countries. (Msg (S/DG-C-15 Dec 80/Decl 15 Dec 84), ADCOM/XP to USAF/XOXX, "Reorganization of USAF Air Defense and Surveillance and Warning Systems," 19/2110Z Dec 78; Msg (S/DG-C-15 Dec 80/Decl 15 Dec 84), Hq USAF/XO to Hq ADCOM/XP, "Reorganization of USAF Air Defense and Surveillance and Warning Systems," 18/1425Z Jan 79.)

17. Hist of ADCOM, 1977-78 (S-Revw 31 Dec 99), p 22 (material used S-Revw 31 Dec 98); Msg (C-Decl 2 Jan 85), AMEMBASSY Canberra to SecState, "Reorganization of USAF Air Defense and Surveillance and Warning Systems," 02/0433Z Jan 79; Msg (U), CINCPAC to AFSSO USAF/PA, "ADCOM Realignment," 05/0446Z Jan 79; Msg (S/DG-C-19 Jan 81/Decl 19 Jan 85), AMEMBASSY Canberra to SecState, "Reorganization . . .," 19/0530Z Jan 79; Msg (S-Revw 26 Jan 99); AMEMBASSY Canberra to SecState, "Reorganization . . .," 26/0559Z Jan 79; Msg (C-Decl 31 Jan 80); SecState to AMEMBASSY Canberra, "Reorganization . . .," 27/0002Z Jan 79; Msg (S-Revw 31 Dec 99), Hq USAF/XOX to Hq PACAF/XP, "Reorganization . . .," 09/1815Z Feb 79; Msg (S-DG-C-13 Mar 81/Decl 13 Mar 85), SecState to AMEMBASSY Canberra et al, "Reorganization . . .," 14/0027Z Mar 79; Msg (S-Revw 29 Oct 99), SDSCS, Woomera AS to Hq ADCOM/DOF, "Reorganization," 29/0230Z Oct 79; Msg (S-Revw 8 Nov 99), SDSCS, Woomera AS, to Hq ADCOM/DOF, "Reorganization," 08/0510Z Nov 79.

18. Msg (S/DG-C-22 Dec 80/Decl 22 Dec 84), AMEMBASSY, Ottawa to SecState, "Reorganization . . .," 22/1645Z Dec 78 (Doc 7); Msg (S/DG-C-22 Dec 80/Decl 22 Dec 84), AMEMBASSY, Ottawa to SecState, "Reorganization . . .," 23/0005Z Dec 78 (Doc 8).

19. Msg (C-Dec1 8 Jan 85) SecState to AMEMBASSY, Ottawa, "Reorganization . . .," 08/2019Z Jan 79, (Doc 9); Msg (C-GDS 11 Jan 84), State 010645, SecState to AMEMBASSY, Ottawa, "Reorganization . . .," 13/1850Z Jan 79 (Doc 10); Msg (C-Dec1 16 Jan 85) USDAO, Ottawa, to SecState, "Reorganization . . .," 16/2233Z Jan 79 (Doc 11).

20. Msg (S-Revw 26 Jan 00), USDAO, Ottawa, to SecState, "Reorganization . . .," 26/2135Z Jan 79 (Doc 12).

21. Ibid.; Msg (S-GDS 6 Feb 85), SecState to AMEMBASSY, Ottawa, "Reorganization . . .," 08/0750Z Feb 79 (Doc 13).

22. Msg (S-Revw 15 Feb 00), USDAO, Ottawa, to Hq USAF/CC/PA/XO, "Reorganization . . .," 15/1847Z Feb 79 (Doc 14).

23. Ltr (S/DG-C-8 Mar 81/Dec1 8 Mar 85), Gen D. C. Jones, Chairman, JCS, to Admiral R. H. Falls, Chief of the Defence Staff, NDHQ, n.s., 8 Mar 79 (Doc 15).

24. Hist of ADCOM (S-Revw 31 Dec 99), 1977-78, pp 20-21 (material used S-Revw-98).

25. Meeting Minutes (U) Second Combined Air Defense Reorganization Planning Conference, 9-11 Jan 79 (Doc 16).

26. Ibid.

27. Talking/Discussion Paper on ADCOM Reorganization (U), prepared by Lt Col D. S. Robinson, XPXP, authenticated by Brig Gen W. E. Lindeman, DCS/Plans and Programs, 28 Feb 79 (Doc 17).

28. Msg (U) Hq SAC/DPR to Hq AFMPC/MPCR, "Aerospace Defense Reorganization," 23/2030Z Jan 79; Msg (U) Hq ADCOM/DPX to Hq AFMPC/MPCR, "Aerospace Defense Reorganization," 25/2030Z Jan 79; Msg (U) Hq AFMPC/MPCR to Hq SAC, info ADCOM, "Aerospace Defense Reorganization," 30/1715Z Jan 79; Msg (U) Hq AFMPC/MPCY to Hq ADCOM/DPX, "ADCOM Reorganization," 21/2000Z Mar 79.

29. Memo for the Record (S-Dec1 31 Dec 90), Col O. H. Wormser, Exec. Asst, Office of the Vice Chief of Staff, USAF, "Proposed Reorganization of USAF Air Defense and Surveillance Warning Resources," 28 Feb 79 (signed as approved by Gen Allen) (Doc 18).

30. Memorandum for Gens Allen and Hill, (U) "ADCOM," from Undersecretary of the Air Force Dr. Hans Mark, 22 Feb 79 (Doc 19). Earlier documentation of the difficulty Dr. Mark

was having accepting wholeheartedly the reorganization can be found in Hist of ADCOM, 1977-78, pp 19-20; Memorandum for Lt Gen William Creech (U), from Dr. Mark, 20 Oct 77 (Doc 20); and Memo for: General Anderson (U), from Lt Col Owen Wormser, CVAR, Hq USAF, "ADCOM Reorganization Proposal," 29 Aug 78, (Doc 21).

31. Ltr (S-Dec1 21 Feb 85) Gen J. E. Hill, CINCAD, to Gen Lew Allen, CofS, USAF, n.d., 22 Feb 79 (transmitted by DACOM IN secure teletype network) (Doc 22).

32. Memo for the Record (S-Dec1 31 Dec 90), Col O. H. Wormser, Exec Asst, Office of the Vice Chief of Staff, USAF, "Proposed Reorganization of USAF Air Defense and Surveillance/Warning Resources," 28 Feb 79 (approved by CSAF Gen Lew Allen) (Doc 18).

33. Ibid.

34. Ltr (S-Dec1 31 Dec 90), Gen Lew Allen, CSAF, to Gen James E. Hill, CINCNORAD/ADCOM, n.s., 19 Mar 79 (Doc 23).

35. Ltr (U), Gen James E. Hill, CINCNORAD/ADCOM, to Gen Lew Allen, CSAF, n.s., 16 Apr 79 (Doc 24).

36. Ltr (U), Col R. E. Magnusson, Dir of Air Defense Operations (DOO), to ADCOM/DO4 and DO2, "Temporary Duty to Reorganization Office," 8 Jan 79; Ltr, Brig Gen W. E. Lindeman, DCS/Plans and Programs, to all DCSs and Chiefs of Special Staff Elements, "Reorganization Working Group," 14 Dec 78.

37. ADCOM Programming Plan 79-3 (U), "Aerospace Defense Reorganization," 5 Mar 79, pp 1-5; D-3 - D-8 (Doc 25).

38. Msg (S-Dec1 27 Feb 85), Hq TAC/XP to Hq ADCOM/XP, "Draft PPL 79-1 Aerospace Defense Reorganization," 28/1307Z Feb 79; Msg (U) Hq SAC/XP to Hq ADCOM/XP, "Aerospace Defense Reorganization PPlan Vol I," 22/2240Z Mar 79; Msg (U), Hq ADCOM/XP to Hq SAC/XP, "Aerospace Defense Reorganization," 02/2215Z Apr 79 (Doc 26); Msg (U), Hq SAC/XP to Hq ADCOM/XP, n.s., 28/1740Z Apr 79.

39. Msg (U), Hq USAF/XO to Hq ADCOM/CS, XP, "ADCOM Re-alignment--Revision of Mission Directives," 22/1845Z Mar 79.

40. Msg (U), OSAF/OIP to ALMAJCOM, "Public Affairs Guidance for Base Closures and Realignments," 28/1800Z Mar 79; Msg (U), OSAF/OIP to ALMAJCOM, "State by State Summary," 28/1810Z Mar 79. (U) Later, the Air Force's decision not to announce prior to 29 March that ADCOM was a candidate for disestablishment and the headquarters building for closure was challenged in federal court (Willett v. Brown). The case will be examined later in this chapter. As explained by Ms Antonia Chayes, Assistant Secretary of the Air Force for Manpower, Reserve Affairs, and Installations, to Senator Gary Hart (D-Colo), in hearings before the Senate Armed Services Subcommittee on Military Construction, in May, the Air Force did not do so as a policy matter because of on-going sensitive consultations with foreign governments, and technically because it had been determined the ADCOM headquarters (the Chidlaw Building) was not a military installation as defined in 10 U.S.C., Section 2687). There was also, she said, "... some legislative history to the effect that candidacy and decision can be announced concurrently, according to the wording of 2687 . . .", and "... the Air Force felt quite secure . . . and, in no way, regards itself as violating the law." (Stenographic Transcription of Hearings, Subcommittee on Military Construction, Senate Armed Services Committee, 1 May 79, p. 54.)

41. Ltr (U), Gen J. E. Hill, CINCNORAD, to all DCSS and Special Staff Elements, "ADCOM Reorganization," 29 Mar 79 (Doc 27); Msg (U), CINCNORAD to AIG 7142, "ADCOM Reorganization," 29/1501Z Mar 79 (Doc 28).

42. Analysis of public reaction from news articles appearing in local Colorado Springs newspapers. A collection of articles from the Colorado Springs Gazette Telegraph and Colorado Springs Sun pertaining to the proposed phaseout of ADCOM for the year 1979 is included as (Doc 29).

43. Ray Potter, "Realtors Riding Crest of Springs Housing Boom," Colorado Springs Gazette Telegraph, 15 Apr 79.

44. Ann Imse, "Figures Defy ADCOM Job Loss," Colorado Springs Sun, 3 Apr 79.

45. Michael D. Green, "ADCOM Task Force Named," Colorado Springs Gazette Telegraph, 11 Apr 79.

46. Transcript (U) of tape recorded at the meeting by ADCOM/OI, "Air Force/Colorado Springs Public Meeting," 20 Apr 79, pp 3-12, (Doc 30). Mr. John Dennison, ADCOM/HO, was also present at the Public Meeting.

47. Ibid.
48. Ibid., pp 12-28.
49. Ibid., pp-32-38, 46-52 passim.
50. Ibid., p 48.
51. Ibid., pp 38, 46.
52. Ibid., pp 54-56.
53. Ltr (U), William J. Hybl, Attorney at Law, to Gen J. E. Hill, CINCNORAD, n.s., 26 Apr 79, with 1 Atch: ADCOM Task Force Report, 25 April 1979 (Doc 31).
54. Hearings before the Subcommittee on Military Construction Appropriations, Committee on Appropriations, House of Representatives, 96th Congress, First Session, "Base Closures and Realignment Proposed by Department of Defense, Fiscal Year 1979," pp 165-173 (Representative Kramer's questions and the Air Force's answers are included pp 685-687.); "Kramer Defends ADCOM," Colorado Springs Sun, 26 Apr 79. The House Committee on Appropriations Report on the 1980 Appropriations Bill carried a factual explanation of the Air Force's action, and the Air Force was lauded for its responsiveness to the Committee's original request to look into the matter of overlap between ADCOM, SAC, and TAC even though it meant a reduction in the Air Force's structure. (House Report 96-450, "Report of the Committee on Appropriations, DOD Appropriations Bill FY-80," 20 Sep 79.)
55. Ltr (U), R. W. Gutmann, Director, Logistics and Communications Division, United States General Accounting Office, to the Honorable Ken Kramer, House of Representatives, n.s., 25 Jun 79 (Doc 32).
56. "Hart Wary of NORAD Change," Colorado Springs Sun, 19 Jan 79, p 1; "Review of ADCOM Reduction Promised," Colorado Springs Sun, 28 Jan 79, p 4.
57. Glenn Urban, "Hart Doubts ADCOM Return," Colorado Springs Gazette Telegraph, 18 Apr 79.
58. Atch (U) Transcript of Hearings before Subcommittee on Military Construction, Senate Armed Services Committee, 1 May 79, to Memo, Lt Col J. Graham, SAC/LLL, to ADCOM/HO, 24 Aug 79.
59. Report No. 96-209, Report by Senator Hart to Accompany Senate Bill 1319, Military Construction Authorization, FY-80, 96th Congress, 1st Session, 12 Jun 79, pp 5-6; Michael D.

Green, "Air Force Defends ADCOM Decision," Colorado Springs Gazette Telegraph, 18 May 79; Allen Cromley, "Sen Hart Urges Study of Defense Requirements," Colorado Springs Sun, 15 May 79. Hart's office explained to ADCOM that while the statement might generate just another study, it might also create enough Congressional pressure to produce more definitive OSD policy guidance. This might, in turn, produce procurement funds for modernization. (SSS (U), Brig Gen W. E. Lindeman, DCS/Plans and Programs, ADCOM, to CC et al, "Proposed Statement by Senator Hart," 22 May 79.)

60. Colorado Springs Gazette Telegraph, 30 Dec 79, p B-1.

61. 32 C.F.R. [Code of Federal Regulation] Section 214.7, as quoted in Memorandum Opinion and Order Granting Request for Preliminary Injunction and Denying Motion to Dismiss or for Summary Judgment in Civil Action No 79-451 (Willett et al vs. Brown et al), United States District Court for the District of Colorado, 23 May 79, p 5 (Doc 33).

62. Study (U), "Environmental Impact Assessment for the Proposed Reorganization of the USAF Air Defense and Surveillance Resources," DAF April 1978, p V-1, (Doc 34).

63. Ibid., p VIII-1.

64. "Negative Determination for Proposed Reorganization of USAF Aerospace Defense Forces," Col F. J. Smith, Chairman, Hq USAF Environmental Protection Committee, 17 May 78 (Doc 35).

65. Ibid.

66. "Supplement to Negative Determination and Environmental Assessment for Proposed Reorganization of USAF Aerospace Defense Forces," (U) Col Francis J. Smith, Chairman, Hq USAF Environmental Protection Committee, 7 Feb 79 (Doc 36); "Supplement No 2 to Negative Determination . . .," (U) Col Francis J. Smith, Chairman, Hq USAF Environmental Protection Committee, 15 Mar 79 (Doc 37).

67. Msg (S-Dec1 1 Mar 84), CINCAD to Hq USAF/PA/LE, "Environmental Analysis . . .," 01/2100Z Feb 79 (Doc 38).

68. Msg (U), Hq USAF/LE to CINCAD/CS, "Environmental Analysis . . ." 13/1830Z Mar 79 (Doc 39).

69. Summons, Civil Suit, Richard N. Willett et al v. Harold Brown et al, Civil Case No. 79-F-451, in the United States District Court for the District of Colorado, 17 Apr 79 (Doc 40).

70. "Suit Disputes ADC Shutdown," Colorado Springs Sun, 19 Apr 79:

71. Answer, Civil Suit Willett et al v. Brown et al, Civil Case No 79-F-451, in the United States District Court for the District of Colorado, no date (Doc 41)

72. Memorandum Opinion and Order Granting Request for Preliminary Injunction and Denying Motion to Dismiss or for Summary Judgment, Suit of Willett v. Brown, Civil Action No. 79-F-451, in the United States District Court for the District of Colorado, signed by Judge Sherman Finesilver, 23 May 79 (Doc 33). (U) The Chidlaw Building was constructed expressly as a headquarters for a major air command in 1962 and early 1963, being dedicated in March 1963. It was entirely windowless and special fallout protection and security alarms and shelters were provided. (Historian's note.)

73. Memorandum to General Moore (ADCOM/CV) (U), "Willett vs. Brown," Col J. D. Mazza, JAG, 23 May 79; "ADCOM Ruling Delayed," Colorado Springs Sun, 15 Jun 79.

74. Memorandum of Points and Authorities in Support of Motion to Dismiss or, in the Alternative, for Summary Judgment, Suit of Willett v. Brown, Case No. 79-F-451, in the United States District Court for the District of Colorado, by Joseph Dolan, U.S. Attorney, 18 Jul 79. (Doc 42); Report (U), "Formal Environmental Assessment for the Proposed Reorganization of the USAF Air Defense and Surveillance/Warning Resources," 29 Jun 79, revised 11 Jul 79, prepared by Hq AFESC, Hq MAC, Hq TAC, and Hq SAC. (Doc 43). (U) Concern for the effect the injunction was having on personnel actions with regard to the closure of ADCOM caused the Air Force to motion the Court on 23 July that it be allowed to issue letters of preliminary offer of transfer to ADCOM civilian employees and to be able to use the negative responses received for planning purposes. The Court agreed to modify the injunction of 23 May to allow the issuance of preliminary offers of transfer. Affirmative responses to such offers were to be considered for planning purposes only and employees could at a later date decide to decline. The files of those responding negatively and those that did not respond did not need to be sent to the gaining commands for consideration. (Motion to Amend Order, Suit of Willett v. Brown, Case No. 79-F-451, in the United States District Court for the District of Colorado,

by Joseph Dolan, U.S. Attorney, 23 Jul 79 (Doc 44); Proposed Supplemental Order, Suit of Willett v. Brown, Case No. 79-F-451, in the United States District Court for the District of Colorado, 24 Jul 79 (Doc 45).

75. Ltr (U), Col J. W. Fahrney, JA/ADCOM, to CV et al, "Litigation: ADCOM Reorganization," 20 Jul 79 (Doc 46); Plaintiffs Brief in Opposition to Defendants' Motion to dismiss, or, in the Alternative for Summary Judgment, Suit Willett v. Brown, Case No. 79-F-451, in the United States District Court for the District of Colorado, 1 Aug 79, p 1 (Doc 47).

76. Ibid., pp 2-10.

77. Defendants' Reply to Plaintiffs' Opposition to Motion to Dismiss, or, in the Alternative for Summary Judgment, Suit Willett v. Brown, Case No. 79-F-451, in the United States District Court for the District of Colorado, Joseph Dolan, U.S. Attorney, 8 Aug 79, pp 8-9 (Doc 48).

78. Minute Order, Suit Willett v. Brown, Case No. 79-F-451, in the United States District Court for the District of Colorado, 13 Aug 79 (Doc 49).

79. "Suit to Keep ADCOM Will Continue," Colorado Springs Sun, 21 Aug 79.

80. Order, Suit Willett v. Brown, Case No. 79-F-451, in the United States District Court for the District of Colorado, signed by Judge Sherman Pinesilver, 21 Aug 79 (Doc 50).

81. "ADCOM Suit Dismissed," Colorado Springs Gazette Telegraph, 22 Aug 79.

82. Msg (U), Hq USAF/PAX to Hq ADCOM/XP et al, "ADCOM Reorganization," 23/1351Z Aug 79 (Doc 51).

83. ADCOM PPlan 79-1 (U), 5 March 79 (draft) (Doc 25). The final plan published in September showed a slight dip for TAC, to 16,222, and no change for AFCS.

84. Ltr (U), Maj Gen F. A. Haeffner, DCS/Plans, TAC, to Maj Gen W. C. Moore, VC, ADCOM, n.s., 15 May 79 (Doc 52).

85. Ltr (U), Maj Gen W. C. Moore, VC, ADCOM, to Maj Gen F. A. Haeffner, DCS/Plans, TAC, n.s., 29 May 79 (Doc 53);

Ltr (U), Maj Gen R. W. Fye, USA, to ADCOM/DP, "Support for TAC ADCOM," 30 May 79 (Doc 54).

86. Msg (U), CINCAD/CC to Hq TAC/CC and Hq AFCS/CC, "ADCOM Reorganization Implementation Date," 31/1945Z May 79 (Doc 55).

87. Msg (U), TAC/CC to CINCAD/CC, "ADCOM Reorganization," 06/1330Z Jun 79 (Doc 56).

88. Msg (U), AFCS/CC to CINCAD/CC, "ADCOM Reorganization Implementation Date," 04/2320Z Jun 79 (Doc 57).

89. Minutes of Hq ADCOM Reorganization Working Group Meeting 11 Jun 79, 18 Jun 79, and 25 Jun 79; Msg (U), USAF/PAX to ADCOM/CS et al, "Air Defense and Surveillance/Warning Realignment," 15/2045Z Jun 79 (Doc 58); Ltr (U), Lt Col L. W. Curl, Asst CS, ADCOM, to ALL DCSs and SSEs, "ADCOM Reorganization Delay," 18 Jun 79 (Doc 59).

90. Briefing (U), "Results of ADCOM Reorganization Conference, 25-27 Jul 79, presented by Col T. W. Jensen, DCS/Plans (Plans, Prgms, and Rqmts), Hq ADCOM at CINC's morning staff meeting, 1 Aug 79 (Doc 60).

91. Msg (U), Hq ADCOM/XP to Hq TAC/XP, Hq SAC/XP, and Hq AFCS/XP, "Reorganization PPlan Concurrence," 31/2030Z Aug 79 (Doc 61); Msg (U) Hq SAC/XPX to Hq ADCOM/XPX, "Aerospace Defense Reorganization PPlan 79-3, Vol I, dtd 1 Sep 79," 04/1500Z Sep 79 (Doc 62); Msg (U), Hq TAC/XPX to Hq ADCOM/XPX, "Aerospace Defense Reorganization PPlan 79-3, Vol I, 1 Sep 79," 10/1247Z Sep 79 (Doc 63); Msg (U), Hq ADCOM/XP to Hq USAF/PAXSA, "Programming Plan 79-1 . . . Monthly Report for October 1979," 09/1545Z Nov 79 (Doc 64).

92. Msg (U), Hq USAF/PAX to Hq ADCOM/XP, "ADCOM Reorganization," 23/1351Z Aug 79; Msg (U), Hq USAF/PA to CINCAD/CC, "Implementation Date for the ADCOM Reorganization," 30/1900Z Aug 79 (Doc 65).

93. Minutes of Hq ADCOM Reorganization Working Group, 4 Sep 79 and 17 Sep 79; Msg (U), Hq SAC/XPX to Hq USAF/PAXSA et al, "Programming Plan 79-3 (ADCOM Reorganization Monthly Report for September 1979)," 11/1500Z Oct 79. On 1 November the SAC office became an Operating Location for DCS/Space Surveillance and Missile Warning Systems, Hq SAC. (Ltr, (U) Maj Gen W. E. Cooper, ADCOM CS to All DCS and SSEs, "Establishment of Hq SAC Operating Location Colorado Springs (OLCS)," 1 Nov 79 (Doc 66).)

94. ADCOM SO G-205, 19 Oct 79; DAF SO GA-65, 10 Oct 79; Msg (U), CINCAD to AIG 7225/CC et al, "Farewell Message from CINCAD," 26/1500Z Sep 79 (Doc 67); Msg (U), Hq ADCOM/DO to 20AD et al, "Message of Appreciation," 28/1715Z Sep 79 (Doc 68).

95. ADCOM SO G-182, 28 Sep 79; ADC SO (C) G-179, 28 Sep 79; Msg (U) CINCAD/CV to 2CS et al, "ADCOM Reassignment Action," 28/1925Z Sep 79 (Doc 69).

96. ADCOM SO G-205, 19 Oct 79; ADCOM PPlan 79-1 (U), "Aerospace Defense Reorganization," 1 Sep 79, pp D-7, D-8 (Doc 70).

97. ADCOM SO G-205, 19 Oct 79; DAF SO GA-68, 16 Oct 79; ADCOM PPlan 79-1 (U), "Aerospace Defense Reorganization," 1 Sep 79, p D-6 (Doc 70). Included as Doc 71 is the "Transfer Agreement Between Aerospace Defense Command and Strategic Air Command for Peterson AFB, CO., and the "Memorandum of Agreement Between NORAD/ADCOM and SAC for Support of the NORAD/ADCOM Staff and the NORAD Cheyenne Mountain Complex."

98. Msg (U), CINCSAC/CS to CINCAD/CS, "ADCOM Units Transfer Dates," 11/1530Z Oct 79 (Doc 72). The 10th AERODS was transferred 1 Nov (ADCOM SO G-206, 23 Oct 79).

99. Msg (U), CINCAD/CS to CINCSAC/CS, "ADCOM Units Transfer Dates," 16/2210Z Oct 79 (Doc 73).

100. Msg (U), Hq SAC/XPM to Hq ADCOM/XPM, "Transfer of ADCOM Units to SAC," 29/2100Z Oct 79; ADCOM SO G-241, 30 Nov 79.

101. Report (S-Revw-98), "Proposal for: A Reorganization of USAF Air Defense and Surveillance Warning Resources, Jan 78, p IV-3, (Doc 39, Chap I, Hist of ADCOM, 1977-78).

102. Atch (S-Revw-98), "NCOC Staff Comments [to Jan 78 draft Proposal for Reorganization of Aerospace Defense Forces] to Ltr, Brig Gen D. W. Winn, Commander NORAD Combat Operations Center, to N/XP (ADCOM), 9 Feb 78 (Doc 42, Hist of ADCOM, 1977-78). Fnt 49, Chap I of that history references documents from other staff agencies expressing concern about various parts of the reorganization proposal.

103. Msg (S-Dec1 86), JCS 3816, JCS to CINCAD, "The Reorganization . . .", 16/1817Z Feb 78 (Doc 46, Chap I, Hist of ADCOM, 1977-78).

104. Hist of ADCOM (S-Revw 31 Dec 99), 1977-78, p 17, Material used (S-Revw-97).

105. Msg (S-Revw-97), CINCAD to JCS, "Reorganization . . .", 08/1509Z Mar 78 (Doc 48, Chap I, Hist of ADCOM, 1977-78).

106. Hist of ADCOM (S-Revw 31 Dec 99), 1977-78, pp 21-23, material used (S-Revw-98).

107. Minutes of Second Combined Air Defense Reorganization Planning Conference, 9-11 Jan 79, pp 7-8 (Doc 16).

108. Handwritten comments by General Hill at bottom of SSS (S), Col W. R. Kenty, Asst DCS Plans and Programs, ADCOM, to A/DO et al, "Retention of Advocacy Role by CINCAD After Reorganization (Hq USAF Interface)," 27 Feb 79, with 1 Atch (S-Dec1 31 Dec 85), "Discussion Paper on Advocacy" (Doc 74).

109. Ltr (S-Dec1 21 Feb 85), Gen J. E. Hill, CINCNORAD, to Gen Lew Allen, CSAF, n.s., 22 Feb 79 (Doc 22).

110. Ltr (U), Col T. W. Jensen, Dir/Plans, Programs, and Requirements, ADCOM, to ADCOM Reorganization Working Group, "Coordination of ADCOM P-Plan," 5 Mar 79.

111. ADCOM PPlan-79-1, 5 Mar 79, pp 3-4 (Doc 25).

112. Msg (U), Hq SAC/XP to Hq ADCOM/XP, " . . . Reorganization P-Plan, Vol I," 22/2240Z Mar 79.

113. Msg (U), Hq ADCOM/XP to Hq SAC/XP, "Aerospace Defense Reorganization," 02/2215Z Apr 79.

114. Msg (U), Hq USAF/XO to Hq ADCOM/CS, XP et al, "ADCOM Realignment . . .", 22/1845Z Mar 79.

115. Memorandum for the Record (S-Dec1 31 Dec 85), "Proposed Reorganization of USAF Air Defense and Surveillance/Warning Resources," Lt Col O. H. Wormser, Executive Assistant, Office of the VCoFS, USAF, 28 Feb 79 (signed and approved by Gen Allen) (Doc 18).

116. SSS (S-Dec1 31 Dec 85), Brig Gen W. E. Lindeman, DCS/Plans and Programs, ADCOM, to CS, CV, CC, "Strategic Defense Advocacy Responsibilities-Post Reorganization," 26 Mar 79.

117. Ltr (S-Dec1 31 Dec 85), Gen J. E. Hill, CINCNORAD, to Gen Lew Allen, CSAF, n.s., 26 Mar 79 (Doc 75).

118. Ltr (U), Gen Richard Ellis, CINCSAC, to Gen Lew Allen, CSAF, n.s., 9 Apr 79 (Doc 76).

119. Msg (U), CINCAD/CV to Hq USAF/PAX, "SAC C2 Master Plan," 23/2303Z Apr 79 (Doc 77).

120. Ltr (U), General Lew Allen, CSAF, to Gen J. E. Hill, CINCNORAD, n.s., 11 Apr 79.

121. Msg (U), Hq USAF/CV to ADCOM/CC et al, "ADCOM Reorganization-Organizational Responsibilities," 09/2223Z Jul 79 (Doc 78).

122. Briefing (U), "ADCOM Reorganization, Missions, Authorities, Responsibilities and Inter-organizational Relationships, presented by Lt Col Hensman, AF/XOXXC, 25 Jul 79 (Doc 79).

123. Minutes of Headquarters ADCOM Reorganization Working Group Meeting (U), 30 Apr 79.

124. Msg (U), Hq AFMPC/MPCYXP to Hq ADCOM/DP, "ADCOM Reorganization," 25/1800Z Apr 80.

125. Minutes (U) of ADCOM Reorganization Conference, 14-16 May 79, AFMPC, Randolph AFB, Texas, Parts II, IV, and V.

126. Minutes (U) of ADCOM Reorganization Conference, 14-16 May 79, AFMPC, Randolph AFB, Texas, "Officer Panel Minutes."

127. Memorandum for the Record (U), "Briefing on Meeting of Command Representatives on Reorganization of ADCOM at MPC, 14-16 May 79," presented to General Hill and his staff at CINCS morning staff meeting, 22 May 79 (historian in attendance).

128. Ltr (U), Col F. R. Nealon, DCS/Personnel, ADCOM, to AFMPC/MPCR, "ADCOM Realignment Manning Plan," 11 Jun 79; Memorandum for the Record (U), "Meeting of DCS Representatives to Hq ADCOM Reorganization Working Group on Reorganization Manning Plan Requirements," 29 May 79 (historian in attendance).

129. Msg (S-Dec1 30 Dec 85), Hq USAF/PA to Hq ADCOM/XP, "Air Defense Reorganization," 26/2300Z Jan 79.

130. Msg (S-Dec1 31 Dec 85), CINCAD/CC to Hq USAF/PA, personal for Lt Gen Greenleaf from Gen J. E. Hill, "Air Defense Reorganization," 07/1630Z Feb 79 (Doc 80).

131. Agreement reached in Second Combined Air Defense Reorganization Planning Conference, 9-11 Jan 79 (Doc 16).

132. Msg (S-Dec1 31 Dec 85), CINCAD/CC to Hq USAF/PA, personal for Lt Gen Greenleaf from Gen J. E. Hill, "Air Defense Reorganization," 07/1630Z Feb 79 (Doc 80); Ltr (S-Dec1 31 Dec 90), Gen Lew Allen, CSAF, to Gen J. E. Hill, CINC-NORAD/ADCOM, n.s., 19 Mar 79 (Doc 23).

133. Ltr (U), Gen J. E. Hill, CINC-NORAD/ADCOM, to Gen Lew Allen, CSAF, n.s., 16 Apr 79 (Doc 24).

134. Msg (U), Hq USAF/CV to ADCOM/CC et al, "ADCOM Reorganization - Organizational Responsibilities," 09/2223Z Jul 79, (Doc 78); Msg (U), Hq USAF/MPM to Hq ADCOM/XP, "ADCOM Reorganization - Organizational Responsibilities," 13/2030Z Jul 79 (Doc 81).

135. Memo (U), Brig Gen W. E. Lindeman, DCS/Plans and Programs, to XPM (Col Saunders), "52 Space Headquarters Reduction," 16 Jul 79; Ltr (U), Maj Gen W. C. Moore, ADCOM/CV to CS et al, "Command Council Meeting," 19 Jul 79, with 1 Atch, "XP Talking Paper with Tabs" (Doc 82); Few historians have the opportunity, like Thucydides had, to write about events in which they have been a participant. In this instance, and to his misfortune, the command historian was there. One of the 52 spaces came from the History Office.

136. Briefing, "Results of ADCOM Reorganization Conference, 25-27 Jul 79, presented by Col T. W. Jensen, Dir of Plans, Programs, and Requirements, Hq ADCOM, at CINC's morning staff meeting, 1 Aug 79 (historian in attendance) (Doc 60).

137. General Hill's comments following above briefing, 1 Aug 79.

138. Atchs 3 and 4 (U), "USAF ltrs to AFMPC of 29 Aug and 31 Aug," to Ltr (U), Col W. R. Kenty, Asst DCS/Plans and Programs, ADCOM, to A/CC, "ADCOM Reorganization Personnel and Manpower Allocation," 6 Sep 79; Msg (U) CINCAD/CC to CSAF/CV, "ADCOM Reorganization Implementation Actions," 11/1720Z Sep 79 (Doc 83).

139. Msg (U), CSAF/CV to CINCAD/CC, "ADCOM Reorganization Implementation Actions," 14/1740Z Sep 79.

140. Ltr (U), Maj Gen R. C. Taylor, Director of Operations and Readiness, DCS/Operations, Plans, and Readiness, Hq USAF, to AF/MPM, "Manning Priorities, ADCOM Reorganization," 17 Sep 79.

141. Ltr (U), Col M. L. Fake, AFMPC Project Officer, to Hq ADCOM/XP et al, "ADCOM Reorganization--Military Personnel Distribution," no date (circa 20 Sep 79 from approval signatures and dates at bottom of letter) (Doc 84).

142. Hist of ADCOM (S-Dec 1 Dec 98), 1976, pp 11-12, material used U.

143. Msg (FOUO), CSAF/PR to CINCAD/CC, "Consolidation of Colorado Springs Activities," 02/1729Z Jul 76 (Doc 20, Hist of ADCOM, 1976).

144. Msg (U), CINCAD/CC to CSAF/PR, "Consolidation of Colorado Springs Activities," 08/1530Z Jul 76 (Doc 19, Hist of ADCOM, 1976).

145. Ltr (U), Gen Daniel James, Jr., to Gen David C. Jones, 28 Jul 76 (Doc 38, Hist of ADCOM, 1976)

146. Ltr (U), Gen Daniel James, Jr., CINCNORAD, to Gen David C. Jones, CSAF, n.s. 2 Jun 77.

147. Affidavit (U) of Major General William D. Gilbert, Air Force Director of Engineering and Services, 21 May 79, filed as attachment to Defendant's "Motion to Dismiss, or, in the Alternate for Summary Judgment," in Case No. 79, F-451 (Willett et al v. Brown et al), District Court, Denver, CO, 18 Jul 79 (Doc 42).

148. Report (S-Revw-98), "Proposal For: A Reorganization of USAF Air Defense and Surveillance/Warning Resources," Jan 78, pp 17, IX-2 (Doc 39, Chap I, Hist of ADCOM 1977-78).

149. Memorandum for the Record (S-Dec 31 Dec 90), Lt Col O. H. Wormser, Exec Asst, Office VCofS, USAF, "Proposed Reorganization . . .", 28 Feb 79 (approved by General Allen) (Doc 18).

150. Staff Action Memo (U), Lt Col W. N. Ague, Exec, DCS/Plans & Programs, ADCOM, to XPX, "Reorganization Activities," 30 Mar 79; SSS (U), Col T. W. Jensen, Director, Plans, Programs, Requirements, DCS/Plans, to XP, "Reorganization Activities," 13 Apr 79 (Doc 85); SSS (U), Col T. D. Cothran, Jr., DCS/Engineering and Services, ADCOM, to ADCOM/XPX, "Study

of Reorganization Proposals for NORAD/ADC at Peterson AFB, CO," 19 Apr 79, with 1 Atch, "NORAD/ADC Reorganization Study-Options" (Doc 86).

151. Ltr (U), Gen J. E. Hill, CINCNORAD, to Gen Lew Allen, CofS, USAF, n.s., 9 May 79 (Doc 87).

152. Ltr (U), Maj Gen R. W. Fye, CofS, ADCOM, to Hq USAF/LEE, "FY 1981 Military Construction Program (Our ltr, 12 Dec 78)," 27 Apr 79 (Doc 88).

153. Memo for the CINC (U), from Maj Gen W. C. Moore, "Telecon with Lt Gen Marion Boswell, Asst Vice Chief of Staff, Friday, 1700, 25 May," 29 May 79 (Doc 89).

154. Background Paper (U), "Facility Survey for (Reorganization)-Staff Relocation," prepared by Lt Col D. P. Johnson, XPPX, ADCOM, 19 Jun 79 (Doc 90).

155. Ltr (U), R. W. Gutmann, Dir, Logistics and Communications Division, Government Accounting Office, to The Honorable Ken Kramer, U. S. House of Representatives, 25 Jun 79 (Doc 32).

156. Denise Gamino, "No Peterson AFB Building Slated for NORAD Move," Colorado Springs Sun, 27 Jun 79.

157. Affidavit (U) of Major General William D. Gilbert, Air Force Director of Engineering and Services, 21 May 79, filed as attachment to Defendant's "Motion to Dismiss, or, in the Alternate for Summary Judgment," in Case No. 79-F-451 (Willett et al v. Brown et al), District Court, Denver, CO, 18 Jul 79 (Doc 42).

158. Memo for the Commander-in-Chief (U), n.s., Maj Gen W. C. Moore, Vice Commander-in-Chief, 12 Jul 79 (note on document from General Hill said: "Good. Press on."), (Doc 91); Ltr (U), Maj Gen W. C. Moore, Vice Commander, ADCOM, to XP, "NORAD/ADCOM Move to Peterson AFB," 20 Jul 79 (Doc 92).

159. Ltr (U), Col G. A. Bohlen, DCS/Engineering and Services, ADCOM, to Hq USAF/LEE, "Programming for NORAD/ADC Headquarters Relocation to Peterson AFB," 15 Oct 79, with 1 Atch: DD1391 (Doc 93).

160. SSS (U), Brig Gen W. E. Lindeman, DCS/Plans and Programs, ADCOM to CC, "Realignment Facilities Requirements," 12 Oct 79, with 1 atch, Ltr (U), Gen J. E. Hill, CINCNORAD/CINCAD, to Gen Lew Allen, CofS, USAF, n.s., 15 Oct 79 (Doc 94).

161. Ltr (U), Gen James A. Hill, VCofS, USAF, to Gen J. E. Hill, CINCNORAD/CINCAD, n.s., 13 Nov 79 (Doc 95).

162. Minutes of the ADCOM Reorganization Working Group Meeting (U), 17 Dec 79.

163. Hist of ADCOM (S-Revw 31 Dec 99), 1978-79, pp 24-31 (material used S-Revw-98).

164. Ibid., pp 31-32 (material used S-Revw-98)

165. Study (TS-XP 79-003), "Space Mission Organization Planning," Executive Summary and Summary Report, Vol I (material used S), pp ES-1, ES-3-4, ES-30-38.

166. Hist of ADCOM (S-Revw 31 Dec 99), 1978-79, p 32 (material used S-Revw 98); Ltr (S-Dec1 29 Jan 85), Gen J. E. Hill, CINCNORAD, to Gen Lew Allen, CofS, USAF, n.s., 5 Feb 79 (Doc 96).

167. Ltr (S-Dec1 29 Jun 85), Gen Hill to Gen Allen, 5 Feb 79 (Doc 96). Hill repeated his position in a ltr to Allen, 22 Feb 79 (Doc 22).

168. Ltr (S-Dec1 19 Apr 85), Gen J. E. Hill, Commander in Chief, ADCOM, to Gen Lew Allen, CofS, USAF, n.s. 27 Apr 79 (Doc 97). A detailed examination of space organizational alternatives and ADCOM's concerns also went to Lt Gen R. L. Lawson, Dir of Plans and Policy, J-5, JCS, on 27 Apr 79 (Doc 98).

169. Attach 6, "SMOPS 'Votes'," (S) to Background Paper on Space Mission Organization Planning Study (SMOPS), (S-Revw 5 Feb 99), 14 Jan 80 (Doc 99); Comments by General Hill (U), in ADCOM Morning Staff Meeting, 12 Feb 79 (Historian in attendance).

170. Background Paper on Space Mission Organization Planning Study (SMOPS), (S-Revw 5 Feb 99), 14 Jan 80 (Doc 99); Msg (U), OSAF/OIP to ALMAJCOM-SOA/OI, "Space and Missile System Realignment," 03/2100Z Aug 79.

171. Hans M. Mark, "USAF's Three Top Priorities," Air Force, Sep 79, Vol 62, No 9, p 66.

172. Ltr (U), Gen J. E. Hill, CINCAD, to Gen Lew Allen, CofS, USAF, n.s., 21 Dec 79 (Doc 100). Hill also wrote to Secretary Mark late in the year that he was confident the Secretary would guide Air Force space organization "along the proper path." (Ltr, Hill to Mark, 26 Dec 79 (Doc 101).)

173. Cost sharing plans are discussed in Journal of Discussions of the Permanent Joint Board of Defense (S-Dec1 31 Dec 08), meetings 144 through 150, quarterly from Sep 76 through Jun 78.

174. Msg (S-No DG Instructions), NDHQ, Ottawa, to RCCPNH/CDLS, Washington, and CANSUPPORT, Ent AFB, "North American Air Defense," 10/2001Z May 78. The Danson letter is quoted verbatim in this message (Doc 102).

175. Ltr (U), Gen J. E. Hill, CINCNORAD, to Chairman of JCS, "Modernization of North American Air Defense Systems in Canada and Alaska (Your Memo, CM-1940-78, 24 May 78)," 14 Jun 78 (Doc 103).

176. Ltr (U), SecDef Harold Brown to Minister of Defense Barnett J. Danson, 29 Jun 78. Ltr is reproduced in Final Report (S-Revw Jul 99), "Joint U.S.-Canada Air Defense Study," Oct 79, p A-6 (Doc 104).

177. Journal of Discussions and Decisions (S-Dec1 31 Dec 08), "151 Meeting of the PJBD, 11-14 Oct 78," p 16 (material used C).

178. Msg (C-GDS-84), JCS to CINCNORAD, "Terms of Reference, Joint U.S.-Canada Air Defense Study," 29/2359Z Nov 78 (Doc 105).

179. Ibid.

180. Msg (C-GDS-84), Hq NORAD/J-5 to JCS/J-5, "Terms of Reference . . .," 01/1400Z Dec 78. The following Hq ADCOM/NORAD officers and civilians served on the Study Group: Col Louis Churchill, Col Walt Davis, Mr. William Fischer, Mr. Elton Helfrick, Maj Donald Johnson (CF), and Maj Ken Mayne (CF). NORAD advisors to the Working Group were Col W. R. Kenty, Col R. W. Morton (CF), and Col H. S. Tetlock (CF).

181. Ltr (S-RD), Gen J. E. Hill, CINCNORAD, to SecDef Harold Brown, 3 Oct 78. Hill's fears were real enough. The Secretary of Defense's Draft Consolidated Guidance, FY 1981-85, dated 9 Feb 79, stated "New air defense procurement programs should not be initiated until the joint U.S.-Canadian air defense study has been completed and its results considered in our force planning." CINCAD objected that the joint study was but one of several documents used to determine program objectives, and he predicted that if the study recommended any programs not in current programming documents, delays would incur in modernization while U.S. and Canadian

governmental agencies considered the study. The next version of the CG, on 12 April, said new procurement, such as space-based systems, should not be initiated until the study was completed and its results considered in force planning. (SSS (S-RD), Brig Gen W. E. Lindeman, DCS/Plans and Programs, ADCOM, to A/CC et al, "Draft Consolidated Policy Guidance and Draft Consolidated Guidance," 24 Apr 79; Msg (S-Revw-99), CINCAD/CC to JCS/CJCS, "Draft Consolidated Guidance (CG) FY 81-85," 22/2010Z Feb 79.)

182. SSS (U), Col W. R. Kenty, Asst DCS/Plans and Programs, ADCOM, to NORAD/CC, et al, "JUSCADS Conference, 13-15 Feb 79," 8 Feb 79, with 3 atchs.

183. SSS (U), Maj Gen (CF) R. R. Barber, NORAD/DCS Plans and Programs, to CC et al, "Joint U.S./Canada Air Defense Study Status Report and Current Task Plan," 6 Mar 79.

184. SSS (U), Col (CF) H. S. Tetlock, Asst DCS/Plans and Programs, NORAD, to CC et al, "Joint U.S.-Canada Air Defense Study, Preliminary Results Briefing," 9 Apr 79, with atch (S-Dec1 31 Dec 08), "Point Paper" (Doc 106); SSS (C-Dec1 18 Apr 85), Col L. L. Churchill, Spec Asst, DCS/Plans and Programs, NORAD, to CC et al, "JUSCADS Meeting, 11-12 Apr 79-- Trip Report," 18 Apr 79, with 2 atchs (Doc 107); SSS (C-Dec1 9 May 85), Col W. R. Kenty, Asst DCS/Plans and Programs, ADCOM, to N/CC et al, "JUSCADS," 15 May 79, with 1 atch (Doc 108).

185. Ltr (S-Dec1 19 Apr 85), Gen J. E. Hill, CINCNORAD, to Lt Gen R. L. Lawson, Dir of Plans and Policy (J-5), JCS, 27 Apr 79 (Doc 98).

186. SSS (C-Dec1 9 May 85), Col W. R. Kenty, Asst DCS/Plans and Programs, ADCOM, to N/CC, "Joint U.S.-Canada Air Defense Study (JUSCADS)," 15 May 79, with 1 atch; Memo (C-Dec1 9 May 85), JCS Vice Dir (J-5) to Dir Joint Staff, 12 May 79, with 1 atch, Memo (C-Dec1 9 May 85), JCS Vice Dir (J-5) to Mr. Siena (Doc 108); SSS (S-Revw 4 Jun 85), Brig Gen W. E. Lindeman, DCS/Plans and Programs, ADCOM, to N/CC et al, "Report of Joint JUSCADS Working Group Meeting," 4 Jun 79, with 1 atch: Summary (S-Revw 4 Jun 85), of Key Points of Briefing (Doc 109).

187. Msg (S-Revw 4 Jun 85), CINCNORAD/CD to OSD/ISA, NDHQ/ADM POL, "JUSCADS Tentative Conclusions Briefing," 06/2130Z Jun 79 (Doc 110).

188. Talking Paper on Joint U.S.-Canada Air Defense Study (JUSCADS) (S-Revw Jun 99), prepared by Col L. L. Churchill, 17 Oct 79 (Doc 111); SSS (S-Dec1 30 Aug 85), Col W. E. Kenty, Asst DCS/Plans and Programs, ADCOM, to N/CC et al, "JUSCADS Joint Working Group Memorandum to Mr. Aldridge, Study Director," 4 Sep 79, with 1 atch: Joint Working Group Memo, with 1 atch (S-Dec1 30 Aug 85) (Doc 112); Msg (S-Dec1-85), NORAD/J-5 to OSD/ISA, and NDHQ/ADM POL, "NORAD Comments on JUSCADS Final Draft, Sep 79," 02/1500Z Oct 79 (Doc 113); Msg (S-Revw Jul 99), Hq NORAD/J-5 to OSD/ISA and NDHQ/ADM POL, "NORAD Comments on JUSCADS Final Draft, Sep 79," 05/2030Z Oct 79 (Doc 114).

189. Ltr (S-Revw Jul 99), Gen J. E. Hill, CINCNORAD, to Mr. James V. Siena, Dep Asst Sec (Eur and NATO Affairs), OSD, n.s., 4 Oct 79 (Doc 115). An identical letter was sent to Mr. John F. Anderson, Asst Dep Min (Policy), NDHQ, Ottawa.

190. Final Report (S-Revw Jul 99), "Joint U.S./Canada Air Defense Study," Oct 79, pp-1-3, 1-15, 1-17 (Doc 104).

191. Ltr (S-Revw Jul 99), Hill to Siena, 4 Oct 79 (Doc 115).

192. SSS (S-Revw Jul 99), Maj Gen (CF) C. A. LaFrance, DCS/Plans and Programs, NORAD, to N/CC, et al, "Joint U.S./Canada Air Defense Study (JUSCADS)," 17 Oct 79 (Doc 116); Msg (S-GDS 18 Oct 85), Secstate to AMEMBASSY Ottawa, "Joint U.S./Canada Air Defense Study (JUSCADS)," 18/1706Z Oct 79 (Doc 117); Msg (U), JCS-J-5 to CINCNORAD/J-5, "Future Policy for North American Air Defense," 06/1623Z Nov 79 (Doc 118).

193. Briefing (S-Revw Jul 99), Mr. Pete Aldridge, Study Director, to General Hill, 8 Nov 79 (Historian in attendance); Msg (S-Revw 99), CINCNORAD/CC to OASD/ISA, and NDHQ/ADM (POL), "JUSCADS Final Results Briefing," 14/2310Z Nov 79 (Doc 119); Msg (U), NORAD/J-5 to JCS/J-5, "NORAD Comments on JUSCADS Final Report," 28/2250Z Nov 79 (Doc 120); Ltr (U), Gen J. E. Hill, CINCNORAD, to Mr. James V. Siena, Dep Asst Sec (Eur and NATO Affairs), OSD, n.s., 21 Dec 79 (Doc 121); Msg (C-Dec1 '26 Dec 85), SecDef/USDP to CINCNORAD, for Gen Hill from J. V. Siena, "JUSCADS Final Results Briefing," 26/2315Z Dec 79 (Doc 122).

194. Ltr (S-Revw-99), Gen Hill to Gen Jones, n.s., 28 Nov 79, with 1 atch: "Policy Paper" (Doc 123).

195. Policy Paper (S-Revw 23 Nov 99), "NORAD Proposal for a United States-Canada Policy for the Air Defense of the North American Continent," to Ltr (S-Revw 23 Nov 99), Gen J. E. Hill, CINCNORAD, to Gen D. C. Jones, CJCS, n.s., 28 Nov 79 (Doc 123).

196. Memorandum for the Secretary of Defense (S-Revw 4 Dec 99), from Vice Admiral Thor Hanson, Dir, Joint Staff (for the JCS), "Policy Recommendations for North American Air Defense," (JCSM-339-79), 10 Dec 79 (Doc 124).

197. Ltr (S-Revw 99), Lt Gen J. V. Hartinger, CINCNORAD, to Hq USAF/XO, "North American Air Defense . . .," with 1 attach: Talking Paper (S-Revw 99), "NORAD Views of the Joint U.S./Canada Air Defense Study," 18 Jan 80 (Doc 125); Interest Paper (S-Revw 15 Jan 2000); "Policy Recommendations . . .," Lt Col R. J. DeLar, XPXA, 15 Jan 80 (Doc 126).

198. Hist of ADCOM, Jan 77-Dec 78, p 252; See Appendixes XII, XIII, and XIV, this history.

199. Ibid.

200. Hist of ADCOM, Jan 77-Dec 78, p 250; See Appendix XI, this history.

201. ~~Chart (U), ADC Personnel Strength (Including ADCOM), 31 Dec 79 (see Appendix XIV); Chart (U), NORAD Joint Table of Distribution Strength, 31 Dec 79 (see Appendix XI).~~

202. Hist Rpts (U), DCS/Personnel to Office of Hist, Jan-Jun 79, 31 Jul 79, and Jul-Dec 79, 16 Jan 80 (Office of Hist file 25.5).

203. Ltr (U), ADCOM DCS/Intelligence to the NORAD/ADCOM staff, subj: Internal Reorganization of NORAD-ADCOM/IN, 5 Dec 79, with 1 attach: ADCOM/IN msg (U), 302230Z Nov 79 (Doc 127).

204. Hist Rpts (U), DCS Intelligence to Office of Hist, Jan-Jun 79, 2 Aug 79, and Jul-Dec 79, 15 Jan 80 (Office of Hist file 25.8).

205. Hist Rpts (S-Revw-99) (material used U), DCS/Operations to Office of Hist, Jan-Jun 79, 21 Aug 79, and Jul-Dec 79, 17 Jan 80 (Office of Hist file 25.4).

206. Hist Rprts (U), DCS/Logistics to Office of Hist., Jan-Jun 79, 25 Jul 79, and Jul-Dec 79, 17 Jan 80 (Office of Hist. file 25.11).

207. Hist Rprts (S-Dec1-09) (items used U), DCS/Plans, Policy, Programs, and Requirements to Office of Hist., Jan-Jun 79, 19 Jul 79, and Jul-Dec 79, 15 Jan 80 (Office of Hist. file 25.16).

208. Hist Rprts (U), DCS/Communications, Electronics, and Computer Services to Office of Hist., Jan-Jun 79, 25 Jul 79, and Jul-Dec 79, 7 Feb 80 (Office of Hist file 25.10).

209. Ibid.

210. Hist Rprts (U), DCS/Communications, Electronics, and Computer Services to Office of Hist., Jan-Jun 79, 25 Jul 79, and Jul-Dec 79, 7 Feb 80 (Office of Hist file 25.10).

211. Hist Rprts (U), DCS/Comptroller to Office of Hist., Jan-Jun 79, 26 Jul 79, and Jul-Dec 79, 10 Jan 80 (Office of Hist. file 25.1).

212. Hist Rprts (U), Dir of Public Affairs to Office of Hist., Jan-Jun 79, 27 Jul 79, and Jul-Dec 79, 14 Jan 80 (Office of Hist. file 25.12); msg (U), USAF to ALMAJCOM, 272130Z Aug 79 (Doc 128).

213. Hist Rprts (U), Judge Advocate to Office of Hist., Jan-Jun 79, 30 Jul 79, and Jul-Dec 79, 15 Jan 80 (Office of Hist. file 25.9).

214. Hist Rprts (U), Dir of Admin to Office of Hist., Jan-Jun 79, 30 Jul 79, and Jul-Dec 79, 25 Jan 80 (Office of Hist. file 25.2).

215. Hist Rprts (U), Inspector General to Office of Hist., Jan-Jun 79, 17 Aug 79, and Jul-Dec 79, 22 Jan 80 (Office of Hist. file 25.7).

216. Hist Rprts (U), Chief of Safety to Office of Hist., Jan-Jun 79, 24 Jul 79, and Jul-Sep 79, 17 Jan 80 (Office of Hist. file 25.13).

217. Hist Rprt (U), Command Surgeon to Office of Hist., Jan-Jun 79, 24 Jul 79, and Jul-Sep 79, 17 Jan 80 (Office of Hist. file 25.14).

218. Hist Rprt (U), Command Chaplain to Office of Hist., Jan-Jun 79, 26 Jul 79 (Office of Hist. file 25.6).
219. Hq NORAD/ADCOM Staff Bulletin No. 39 (U), 4 Oct 79 (Doc 129).
220. Hist. Rprts (U), Dir of Security to Office of Hist., Jan-Jun 79, 25 Jul 79, and Jul-Dec 79, 10 Jan 80 (Office of Hist. file 25.15).
221. Hist. Rprt (U), DCS/Engineering and Services to Office of Hist., Jan-Jun 79, 31 Aug 79 (Office of Hist. file 25.3).
222. Msg (U), Hq ADCOM to Hq USAF, 301930Z Nov 79 (Doc 130).
223. Ibid.
224. Booklet (U), A Guide and Checklist, Transfer of Function and Reduction-in-Force, ADCOM Dir of Civilian Personnel, April 1979 (Doc 131).
225. Booklet (U), Procedures for Functional Transfer of Civilian Employees, ADCOM, Mar 79 (Doc 132); Ltr (U), ADCOM to all DCS and special staff, subj: ADCOM Reorganization, Langley AFB, VA Briefings, 11 Sep 79 (Doc 133); Ltr (U), ADCOM Director of Civilian Personnel to all DCS and special staff, subj: Counseling on RIF and Transfer of Function, 31 Oct 79 (Doc 134).
226. Intvw (U), Mildred W. Johnson, Office of Hist, with Mr. Charles L. Shinn, Dir of Civilian Personnel, DCS/Personnel, 16 Apr 80.
227. Msg (U), ADCOM to Dets 4 and 5, 4603 MEF, 241530Z Aug 79 (Doc 135).
228. Ltr (U), Civilian Personnel Office, 46AERODW, subj: Preliminary Offer of Transfer of Function, 4 Sep 79 (Doc 136).
229. Msg (U), ADCOM to USAF, 071800Z Jun 79 (Doc 137).
230. Ltr (U), Civilian Personnel Office, 46AERODW, subj: Notice of Reduction-in-Force - Transfer of Function, 1 Nov 79 (Doc 138).

231. Hist. Rprt (U), ADC DCS/Personnel to Office of Hist., Jul-Dec 79, 16 Jan 80 (Office of Hist. file 25.5).

232. Intvw (U), Mildred W. Johnson, Office of Hist., with Mr. Charles L. Shinn, Director of Civilian Personnel, DCS/Personnel, 16 Apr 80.

233. Ibid.; Ltr (U), 46AERODW, subj: Notice of Reduction-in-Force, 1 Nov 79 (Doc 139); Briefing to CINCAD by ADCOM DCS/Personnel, (no date) (Doc 140).

234. Intvw (U), Mildred W. Johnson, Office of Hist., with Mr. C. L. Shinn, Director of Civilian Personnel, DCS/Personnel, ADCOM, 16 Apr 80; Ltr (U), Vice CINCAD to all DCS and special staff, ADCOM, subj: Civilian Personnel Hiring Freeze - Peterson AFB Complex, 10 Apr 79 (Doc 141).

235. Ibid.

236. Interest Paper (U), DCS/Plans and Programs, ADCOM, subj: FY 79 Officer Grade Reduction, 9 Mar 79 (Doc 142).

237. Memo (U), DCS/Plans and Programs, ADCOM, to staff, subj: Officer Grade Reduction, 20 Mar 79 (Doc 143).

238. Memo (U), DCS/Plans and Programs, ADCOM, to staff, subj: ~~ADCOM Officer Grade Reduction~~, 9 Feb 79 (Doc 144); Memo (U), DCS/Plans and Programs, ADCOM, to CINCAD, subj: ADCOM Officer Grade Reduction, 8 Mar 79 (Doc 145); Memo (U), DCS/Plans and Programs, ADCOM, to Chief of Staff and DCS/Operations, ADCOM, subj: ADCOM Officer Reduction, 4 Apr 79 (Doc 146).

239. Ltr (U), CINCNORAD to USAF, (no subj), 5 Apr 79 (Doc 147); Ltr (U), USAF to CINCNORAD/ADCOM, subj: Reporting Procedures for the FY 1980 General Officer Manning and Position Review Board, 13 Feb 79 (Doc 148); Ltr (U), Lt Gen B. L. Davis, DCS Manpower and Personnel, USAF, to Gen James E. Hill, CINCNORAD/ADCOM, (no subj), 15 Mar 79 (Doc 149).

240. Memo (U), Director of Manpower and Organization to DCS/Plans and Programs, ADCOM, subj: General Officer Reduction, 9 May 79 (Doc 150); Memo (U), DCS/Plans and Programs, ADCOM to DCS/Intelligence, ADCOM, subj: General Officer Reduction, 11 May 79 (Doc 151).

241. Msg (S-Dec1-85), SecState to AMEMBASSY, Ottawa, 192318Z Sep 79 (Doc 4).

242. Ltr (S-Dec1-86), NORAD to 20NR, subj: Joint Table of Distribution (U), 2 Apr 79 (Info used U) (Doc 152); Ltr (U), Chief of Staff, NORAD to DCS/Plans and Programs, NORAD, subj: U.S. Army Manpower Resources in NORAD, 11 Apr 79 (Doc 153); Ltr (U), Chief of Staff, NORAD to NORAD Regions, subj: Coordination of Out of Cycle Change to the NORAD Joint Manpower Program (JMP), 13 Jun 79 (Doc 154); Ltr (U), NORAD Dir/Manpower and Organization to JCS, subj: 1 Oct 79 Out of Cycle Change to the NORAD/ADCOM Joint Manning Program (JMP), 14 Aug 79 (Doc 155).

243. Memo (S-Revw-98), DCS/Operations, NORAD to DCS/Plans and Programs, NORAD, subj: Increased Manpower Authorizations for Det 1, NORAD COC, Tinker AFB, OK (U), 2 May 79, with 1 atch (S-Revw-98): NORAD/DO Proposed Ltr (U), 3 May 79 (Doc 156).

244. Memo (S-Revw-98), DCS/Plans, NORAD to DCS/Operations, NORAD, subj: Increased Manpower Authorizations for Det 1, NORAD COC, Tinker AFB, OK (U), 16 May 79, with 1 atch (S-Revw-98): Hq ADCOM/XPA ltr, 14 May 79 (Doc 157); Ltr (U), USAF (MPMP) to ADCOM, subj: Increased Manpower Requirements for E-3A NORAD Mission Crews, 30 Jul 79, with 1 atch (U): Methodology (Doc 158).

245. Memo for Record (U), DCS/Plans and Programs, ADCOM, subj: Redistribution of SPADOC Resources, 11 Jul 79 (Doc 159).

246. Ltr (U), ADCOM to Air Divisions, subj: Weapons Controller Manning and Experience Levels, 16 Jan 79 (Doc 160).

247. Ibid.; Dir of Assignments, DCS/Personnel, ADCOM, 21 Sep 79.

248. Hist. of ADCOM (S-Revw-99) (material used U), 1 Jan 77-31 Dec 78, p 35.

249. Hist. Rpts (U), DCS/Comptroller to Office of Hist., Jan-Jun 79, 26 Jul 79, and Jul-Dec 79, 10 Jan 80 (Office of Hist. file 25.1); Briefing (U), Monthly Management Review by the Comptroller, Col Louis R. Ravetti, 26 Oct 79 (Doc 161).

250. Ibid.

251. Briefing (U), Monthly Management Review by the Comptroller, Col Louis R. Ravetti, 26 Oct 79.

252. Hist. Rprt (U), DCS/Comptroller to Office of Hist., Jul-Dec 79, 10 Jan 80 (Office of Hist. file 25.1); Briefing (U), Monthly Management Review by the Comptroller, Col Louis R. Ravetti, 26 Oct 79.

253. Ibid.

NOTES

CHAPTER II - BALLISTIC MISSILE SURVEILLANCE AND WARNING

1. SSS (U), Col F.R. Wisneski, Command IG, to CC et al, "Summary of USAF/IG Inspection Report USAF Support to NORAD," 30 Jan 80, with 1 Atch: Summary (S-Dec1 15 Dec 99) (Doc 162); TIG Report (S-Dec1 15 Dec 99/Privileged Document), "Special Inspection of USAF Support to NORAD," PN 80-2056, 3-15 Dec 79, distributed 13 Jan 80, pp 9, 16 (Doc 163). An earlier briefing of IG findings to CINCNORAD, on 15 December, drew criticism from General Hill and his staff that it was hastily done and superficial. General Hill recommended the team return and complete the job. The IG agreed, but whereas it had formerly not planned to prepare a written report, now it decided to do so. On 15 January the Deputy IG for Inspection and Safety briefed CINCNORAD on the above report. It contained recommended corrective actions to which NORAD must officially respond in early 1980. (Briefing of the initial report by Col R. Nolan, AFIG, to CINCNORAD, 15 Dec 79 (Doc 164); SSS (U) Maj Gen B.K. Brown, DCS/Ops, NORAD, to NORAD/CC, "CINC Visit With USAF IG," 2 Jan 80, with Atch (C-Dec1 Jan 2000), "Talking Paper on USAF Special Inspection of NORAD/ADCOM," prep. by Maj P.E. Rose, IGY, ADCOM 2 Jan 80 (Doc 165).

2. TIG Report (S-Dec1 15 Dec 99/Privileged Document), 13 Jan 80, pp 5-6; Rpt (FOUO), "MGR Operator Events" prep. by T/Sgt T.A. Howard, 14 Nov 79; Msg (S-Revw 23 Nov 99), Hq NORAD/DO to JCS/J3/C3S, "False Indications at 09/1551Z Nov 79," 26/1650Z Nov 79 (Doc 166); Memorandum (S-Revw 19 Nov 99), for Dep Dir for Stra C3 Systems and Dep Dir for Ops (Current Ops), JCS, from Col J.J. Kamp, Chief, NEACP, "NEACP Events in Response to Missile Threat Assessment Conference, 9 November 1979," 19 Nov 79 (Doc 167).

3. A collection of press articles is included as (Doc 168).

4. "False Alert of Missiles Sows Fear," Philadelphia Inquirer, 11 Nov 79, p 3; Msg (S-GDS 11/27/85), SecState to US Mission NATO and all NATO capitals, "Inf: Soviets and the False Missile Alert," 28/0022Z Nov 79 (Doc 169).

5. Memorandum for the Record (U), "Continuation of Congressional Briefings in Response to NORAD Alert Inquiries," prep. by Maj Pat Sweeney, OATSD (Legislative Affairs), 5 Dec 79 (Doc 170).

6. Msg (S-Dec1 31 Dec 87), Hq NORAD/J-3 to ASD/C³ I et al (personal for Dr. Dinneen, Lt Gen Shutler, and Lt Gen Dickinson), "Meeting Between Members of NORAD Staff and Sen. Hart," 20/2115Z Dec 79 (Doc 171).

7. Ltr (U) Col P.A. Deering, Dep Comdr for Data Automation, NORAD/ADCOM Combat Operations Center, to ADCOM/DO2, "Operational Review Board Status," 29 Nov 79, with 1 Atch: "FACC Ltr 28 Nov 79," (Doc 172); Msg (S-Revw 1 Dec 99), Hq NORAD/J-3 to JCS/C³S, for Lt Gen Dickinson from Maj Gen Brown, "NORAD ORB Update," 29/1708Z Nov 79 (Doc 173); Msg (S-Revw 30 Nov 99), Hq NORAD/DO to JCS/J-3/C³S/ WWMCS Evaluation Office, "False Indications at 09/1551Z Nov 79," 30/1956Z Nov 79 (Doc 174); Msg (S-Revw 5 Dec 88), NORAD/J-6 to Hq USAF/XOX, "Missile Warning Scenario Control," 05/0215Z Dec 79 (Doc 175); Background Paper on 9 November 1979 False Indications (S-Revw 30 Nov 99), OPR NORAD/DOPC (Maj Sapp), 26 Dec 79 (Doc 176); SSS (U), Lt Col K.E. Lager, Actg Dir, User/Interface Configuration/Control, DCS/Ops, NORAD/ADCOM/ADC, to NORAD/DO, "Action Item Management Book," 4 Jan 80, with 1 Atch (S-Revw 4 Jan 99), "Management Book Contents," (Doc 177).

8. Msg (U), Hq NORAD/DOPC to Hq ADCOS et al, "NORAD/ADCOM Regulation 55-104, 12 Sep 79 "21/1930Z Dec 79; Msg (S-Revw 26 Dec 99), Hq NORAD/J-3 to JCS/J-3/C³S, "Suspension of 427M Development Testing," 26/1415Z Dec 79 (Doc 178).

9. Msg (S-Revw 30 Nov 99), Hq NORAD/DO to JCS/J-3/C³S/WWMCs Eval Office, "False Indications at 09/1551Z Nov 79," 30/1956Z Nov 79 (Doc 174); Memorandum (C-Revw 15 May 99), from Col J.K. Lowe, Dir Air Def Ops, ADCOM/DOO, to President, ORB (Col Brandt), "Operations Review Board (PHASE III Report)," 14 Nov 79 (Doc 179); Memorandum (S-Revw 15 May 99), from Col W.H. Riley, Dir of Cmd and Con Systems, ADCOM/DOC, "Operations Review Board (PHASE III Report)," 16 Nov 79 (Doc 180); Msg (S-Revw 21 Nov 99), Hq ADCOM/DOO to all NORAD Regions et al, "Unit Response to NAWS [NORAD Alert Warning System] Warning Alert," 21/2200Z Nov 79 (Doc 181); Msg (S-Revw 28 Nov 99), Hq NORAD/DO to JCS/J3,

personal for Lt Gen Shutler from Maj Gen Brown, "Missile Attack Warning," 29/0001Z Nov 79 (Doc 182); Msg (S-Revw 28 Nov 99), Hq NORAD/DO to AIG 7812, "Missile Attack Warning," 30/2307Z Nov 79 (Doc 183); Msg (S-Revw 7 Dec 99), Hq NORAD/DO to AIG 7812, "NAS Amber Warning Test," 07/1728Z Dec 79 (Doc 184); Msg (S-Revw 4 Dec 99), Hq NORAD/DOO at ALL NRs et al, "Missile Attack Warning," 18/1952Z Dec 79; Msg (S-Revw 15 May 98), Hq NORAD/DO to AIG 7812 et al, "Missile Attack Warning/Interim Emergency Change 1 to N/A Reg 55-19, Vol III, 15 May 79," 17/1800Z Jan 80 (Doc 185); Msg (U), Hq NORAD/J6 to JCS/C³S, "Review of NORAD Alert System (NAS) Circuits," 25/2300Z Jan 80 (Doc 186).

10. Interest Paper (FOUO) on Proposed Relocation of the Command Section to the Cheyenne Mountain Complex, prepared by Lt Col P.M. Fleming, XPXP, 7 Jan 80 (Doc 187); Ltr (U), Gen J. E. Hill, CINCAD to Chairman JCS, n.s., 27 Dec 79 (Doc 188).

11. Msg (S-Decl 31 Dec 87), Hq NORAD/J3 to ASD/C³I et al, personal for Dr. Dinneen, Lt Gen Shutler, and Lt Gen Dickinson, "Meeting Between Members of the NORAD Staff and Sen Hart," 20/2115Z Dec 79 (Doc 171).

12. Hist (S-Revw 31 Dec 99) of ADCOM, 1977-78, p 103 (material used S-Revw 96); atch 1, Background Paper on Missile Warning and Attack Characterization (S-Decl 8 Nov 85), prepared by Maj Wilkins/XPDW, 8 Nov 79, to SSS, Lt Col P. M. Fleming, Ch, Progs & Rqmts Div, XP to A/XP, "Talking Papers for 1979 CINC's Conference," 13 Nov 79 (Doc 189); Msg (S-Decl 13 Sep 99), CINCAD/CC to JCS/CJCS, "FY-81 CJCS Military Posture Statement," 18/2055Z Sep 79 (Doc 190); ADCOM Command and Control System Master Plan," (S-Revw 1 Jan 99), 30 Nov 79, pp 3-15, 3-16; Interest Paper on BMEWS Modernization (S-Decl 10 Jan 86), prepared by Maj D. L. Wilkins/XPDWG, 11 Jan 80 (Doc 191).

13. Msg (U), Hq AFSC/SDE to Hq ADCOM/XPD, "BMEWS Modernization," 15/2200Z Feb 79 (Doc 192); Msg (S-Revw 99), AFSC/CC to CSAF/CC, for Gen Allen from Gen Slay, "Enhanced Perimeter Acquisition Radar Characterization," 16/1516Z Mar 79 (Doc 193); Msg (S-Revw 31 Dec 91), SSO ADCOM/CC to AFSSO USAF/CC, for Gens Allen, J. A. Hill, and Slay, from Gen J. E. Hill, EPARCS," 28/2220Z Mar 79 (Doc 194).

14. SSS (S-Dec1 6 Feb 85), Maj Gen (CF) R. R. Barber, DCS/Plans and Programs, NORAD, to N/CC, "BMEWS Modernization," 16 Feb 79, with 1 atch, Msg (S-Dec1 6 Feb 85), CINCAD/CV to Hq USAF/RD, "BMEWS Modernization . . .", 12/1800Z Mar 79 (Doc 195).

15. SSS (U), Brig Gen W. E. Lindeman, DCS/Plans and Programs, ADCOM, to A/CC et al, "BMEWS IBM 7090 Replacement," 18 May 79 (Doc 196).

16. Background Paper on BMEWS Modernization (U), prepared by Capt Harmon/XPDS, 27 Jul 79.

17. Hist (S-Revw 31 Dec 99) of ADCOM, 1977-78, pp 103-104 (material used S-Dec1 96); Talking Paper on BMEWS Modernization (S-Dec1 31 Dec 98), prepared by Capt Harmon/XPDS, 10 Jan 79 (Doc 197).

18. Background Paper on BMEWS Replacement Study (S-Revw 27 Nov 98), prepared by Capt Harmon/XPDS, 25 Apr 79 (Doc 198) to SSS (U), Col J. P. Foster, Dep Dir Missile and Space Defense, ADCOM, to A/XP, "BMEWS Replacement Study," 25 Apr 79.

19. Ltr (TS-XPX79-027-Revw 18 Jul 98), General James E. Hill, CINCAD, to Hon. H. R. Brown, SecDef, n.s., 13 Jul 79 (material used S). (U) The Air Force study supportive of BMEWS modernization was finally briefed to Dr. Dinneen, on 14 August. The study of various alternatives continued through the end of the year, however.

20. Ltr (U), Gen James E. Hill, CINCAD, to Hon Gerald P. Dinneen, Asst SecDef (C3I), n.s., 31 Jul 79, with 1 atch (S-Dec1 30 Jul 85), "Ballistic Missile Early Warning System (BMEWS) Modernization vis-a-vis Phased Array" (Doc 199).

21. Talking Paper on BMEWS Modernization (S-Dec1 31 Dec 98), prepared by Capt Harmon/XPDS, 10 Jan 79 (Doc 197); SSS (S-Dec1 31 Dec 91), Brig Gen W. E. Lindeman, DCS/Plans and Programs, ADCOM, to A/CC, "BMEWS Improvement Status," 8 Jan 79 (Doc 200); SSS (U), Col W. R. Kenty, Asst DCS/Plans and Programs, ADCOM, to A/CC et al, "BMEWS Improvement Status," 22 Jan 79 (Doc 201).

22. SSS (U), Col W. R. Kenty, Asst DCS/Plans and Programs, ADCOM, to A/CC et al, "BMEWS IBM 7090 Replacement," 6 Sep 79 (Doc 202); Msg (S-Dec1 20 Oct 85), CINCNORAD/CC to CSAF/CC, "BMEWS Modernization," 15/1730Z Oct 79 (Doc 203).

23. Msg (U), Hq AFSC/ACB to Hq USAF/ACB, "Proposed Deferral FY-80 BMEWS Modernization," 18/1435Z Sep 79; Msg (U), Hq ESD/ACB to Hq AFSC/ACB, "Deferral of FY 80-BMEWS Modernization Funding," 07/2008Z Sep 79; SSS (U), Brig Gen W. E. Lindeman, DCS/Plans and Programs, ADCOM, to A/CC et al, "BMEWS Modernization," 25 Oct 79, with 2 atch, Memorandum for Assistant Secretary of the Air Force (Research, Development and Logistics), from Gerald P. Dinneen, Principal Deputy, USDR&E, 15 Oct 79 (Doc 204); Memorandum for Assistant Secretary of Defense (C3I) (S-Dec1 31 Dec 95), from Eugene H. Kopf, Principal Deputy Assistant Secretary of the Air Force Research, Development, and Logistics, "BMEWS Upgrade . . .", 16 Oct 79 (Doc 205).

24. Msg (S), Hq USAF/RDSD to Hq AFSC/SDE, "BMEWS Upgrade," 29/1430Z Nov 79.

25. Msg (U), Hq AFSC/SDE to Hq USAF/RDXP, "BMEWS Modernization Funding," 04/2004Z Dec 79 (Doc 206); Background Paper on BMEWS Modernization (S-Dec1 10 Dec 85), prepared by Maj Wilkins/XPDW, 12 Dec 79 (Doc 207); Interest Paper on BMEWS Modernization (S-Dec1 10 Jan 86), prepared by Maj Wilkins/XPDWG, 11 Jan 80 (Doc 191).

26. Ltr (S-Revw 5 Dec 98), Maj Gen W. C. Moore, VCINCAD (for Gen J. E. Hill), to Hq USAF/PA, "FY 82-86 Consolidated Guidance," 6 Dec 79.

27. This background information has been taken from CONAD/ADC histories for the period 1971-78.

28. Msg (U), 6 MWS/DO to Hq ADCOM/DOFW, "PAVE PAWS Reliability and Availability Demonstration," 03/1830Z Jan 79; SSS (U), Col L. J. Johnson, Dir of Space and Missile Warning Operations, ADCOM, to A/DO, "Current Status of Otis DT&E and IOT&E," 13 Mar 79; Msg (U), 6 MWS/XPD to ADCOM/XPD, "AN/FPS-115 (PAVE PAWS) Initial Operation Test and Evaluation (OT&E)," 02/1825Z Mar 79.

29. Msg (U), OSAF/OIP to Hq AFSC/OIP et al, "PAVE PAWS East Announcement," 05/2230Z Apr 79; Msg (U), ESD/OCL to Hq AFSC/DLWM, "PAVE PAWS-Otis AFB Status," 12/1945Z Apr 79.

30. ADCOM DCS/Plans Historical Report (XPDS), Jan-Jun 79.

31. Msg (U), Hq ADCOM/XO to ESD/OCL, "PAVE PAWS Submission," 15/2000Z Jun 79 (Doc 208).

32. Msg (S-Dec1 1 Oct 89), Hq ADCOM/DOF, to NMCC/Surveillance Officer, "Status of PAVE PAWS Missile Warning Data," 06/2310Z Jul 79 (Doc 209).

33. Msg (U), Hq ADCOM/DO to Hq USAF/XOO et al, "Status of PAVE PAWS Missile Warning Data--The 60 Day Dual Operation," 31/2050Z Jul 79.

34. Interview (U), John W. Dennison, ADCOM/HO, with Mr. F. E. Brooke, ADCOM/DEMUS, 21 Sep 79; Msg (S-Revw 31 Dec 99), CINCAD to AIG 951, "Commander's Semi-annual Summary, 1 Apr-30 Sep 79," 16/0105Z Oct 79; Msg (U), CINCAD/CV to AFSC/CV, "Otis PAVE PAWS Power Problems," 09/1350Z Aug 79 (Doc 210); Msg (U), Hq ADCOM/DE to ESD/DE/XP, "Otis PAVE PAWS Electric Generation Plant," 14 Aug 79; Msg (U), Hq ADCOM/DO to Hq USAF/XOX/XOO/XOKS, "Otis PAVE PAWS Power Problems and Continued Operation of AN/FSS-7's at Ft Fisher AFS NC and Charleston AFS ME," 15/1945Z Aug 79 (Doc 211). (U) Citizens groups had protested the building of both sites because of alleged health hazards posed by microwave radiation emanating from the radars. Lawsuits were filed on both coasts to halt construction. Those wishing to follow the environmental issues involved are directed to History Electronics Systems Division, (S-Dec1 31 Dec 2007), Air Force Systems Command, 1977, pp 183-187; and, History of ESD (S-Revw 31 Dec 99), 1978, pp 35-44.

35. Msg (U), CINCAD/CV to AFSC/CV, "Otis PAVE PAWS Power Problems," 09/1350Z Aug 79 (Doc 210).

36. Msg (U), Hq AFSC/SO to CINCAD/CV, "Otis PAVE PAWS Power Problems," 20/1212Z Aug 79.

37. Msg (U), ESD/OCL/DE to Hq ADCOM/XPD, "PAVE PAWS-Otis AFB Power Plant," 28/1400Z Aug 79, atch 6, "6 MWS Power Plant Problem," to Staff Action Memorandum (U), from XP (Col Kenty), to XPD, XPX, and XPC, "PAVE PAWS Deficiencies," 17 Oct 79; Interest Paper on 6th Missile Warning Squadron (Otis AFB) PAVE PAWS (S-Dec1 1 Oct 89), prepared by CMSgt Martin, ADCOM/XPDW, 17 Oct 79 (Doc 212).

38. Msg (S-Dec1 31 Oct 89), Hq ADCOM/DO to Hq USAF/XOO/PAX/ACB, "PAVE PAWS Missile Warning Data," 07/1645Z Sep 79 (Doc 213); Msg (U), CINCAD/CV to Hq USAF/RDS/XOK/XOO/XOX, "Otis PAVE PAWS Power Problems," 10/1840Z Sep 79 (Doc 214); Talking Paper on PAVE PAWS (S-Dec1 27 Sep 87), prepared by Maj Nelson, ADCOM/XPDW, 26 Sep 79 (Doc 215); Msg (U), Hq ADCOM/DO to Hq USAF/XOO/PAX/ACB, "Otis PAVE PAWS and AN/FSS-7 Sixty Day Dual Operations," 28/2145Z Sep 79 (Doc 216).

39. Interest Paper on 6th Missile Warning Squadron (Otis AFB) PAVE PAWS (S-Dec1 1 Oct 89), prepared by CMSgt Martin, ADCOM/XPDW, 17 Oct 79 (Doc 212).

40. Msg (U), Hq ADCOM/DO to Hq USAF/XOO/PAX/ACB, "Termination of Otis PAVE PAWS and AN/FSS-7 Sixty Day Dual Operations," 07/1710Z Nov 79 (Doc 217).

41. Talking Paper on Otis PAVE PAWS (U), prepared by Maj L. P. Nelson, ADC/XPDW, 14 Jan 80 (Doc 218).

42. Ltr (U), Col R. R. Atkinson, Jr., Commander 14MWS (ADCOM), to CINCAD/CV, "14 MWS Quarterly Activity Report for the Period 1 January-31 March 1979; Msg (U), Hq USAF/XOO/PAX to Hq ADCOM/DO/AC, "Extension of AN/FSS-7 Operations at Charleston AFS, ME and Ft Fisher AFS, NC," 18/1400Z Apr 79; SSS (U), Lt Col F. L. Nance, Director of Space and Missile Warning Operations, DCS/Ops, ADCOM, to DO, "Impacts of AN/FSS-7 East Coast Extension," with 2 afchs (Doc 219); Msg (U), Hq USAF/XOO/PAX/ACB to Hq NORAD/DO/AC/XP, "Extension of AN/FSS-7 Operations . . . ", 20/1531Z Jun 79 (Doc 220); Msg (U), Hq USAF/XOO/PAX/ACB/XOX/AC/XP to Hq ADCOM/DP/AC/XP, "Continued Operation of AN/FSS-7 Radars . . . ", 07/1330Z Sep 79 (Doc 221); Msg (U), Hq ADCOM/DO to Hq SAC/AC/SX, "Continued East Coast FSS-7 Operation," 16/2205Z Nov 79 (Doc 222); Msg (U), Hq SAC/ACB to Hq ADCOM/CC/ACB, "Continued East Coast FSS-7 Operation," 20/2300Z Nov 79 (Doc 223); Msg (U), CINCAD/CS to CINCSAC/CS, "East Coast AN/FSS-7 SLBM Detection and Warning Radar Continued Operation," 19/1420Z Nov 79 (Doc 224).

43. Msg (U), CINCNORAD/CC to Det 5 14 MWS/CC and Det 6 14 MWS/CC, "Special Recognition," 21/2000Z Dec 79 (Doc 225).

44. Hist (S-Revw 31 Dec 99) ADCOM, 1977-78, pp 119-120 (material used S-Revw 98); SSS (S-Dec1 1 Dec 98), Brig Gen W. E. Lindeman, DCS/Plans and Programs, ADCOM, to A/CC et al, "Position Paper on PARCS," 10 Jan 79, with 1 atch, "Position Paper" (this paper references Hq ADCOM/CV msg to USAF, "FY-79 O&M Funding Distribution," 06/1501Z Dec 78.) This paper makes the point that although PARCS had marginal value as an ICBM sensor, and it was in that context that previous studies had examined its usefulness, it should be retained for SLBM coverage of northerly ocean areas and to provide satellite tracking support (Doc 226).

45. Msg (S-Dec1 1 Dec 98), Hq ADCOM/XP to Hq USAF/RDQ, "EPARCS," 26/2145Z Dec 78 (Doc 227).

46. Msg (S-XGDS-3/91), AFSSO/AFSC/CC to AFSSO/CSAF/CC, for Gen Allen from Gen Slay, "EPARCS," 03/2330Z Jan 79 (Doc 228).

47. Msg (S-Revw 31 Dec 91), AFSSO/USAF/CC to AFSSO/AFSC/CC, for Gen Slay from Gen Allen, "EPARCS," 10/1300Z Mar 79 (Doc 229).

48. Msg (S-Revw 31 Dec 91), Hq AFSC/CC to CSAF, "EPARCS," 16/1516Z Mar 79.

49. Msg (S-Revw 31 Dec 91), SSO/ADCCM/CC to AFSSO/USAF/CC, for Gens Allen, J. A. Hill, and Slay, from Gen J. E. Hill, "EPARCS," 28/2220Z Mar 79 (Doc 230).

50. Msg (S-Revw 31 Dec 91), Hq AFSC/SDE to ESD/OC, "EPARCS," 16/1516Z Mar 79 (Doc 231).

51. Ibid.

52. Msg (U), Hq USAF/RDSD to Hq AFSC/OC, "EPARCS," 23/1600Z Mar 79 (Doc 232).

53. Msg (S-Dec1 2 Apr 98), CINCAD/CC to Hq USAF/RD, "EPARCS," 11/1645Z Apr 79 (Doc 233).

54. Msg (S-Dec1 2 Apr 98), Hq USAF/RD to CINCAD/CC, "EPARCS," 26/1350Z Apr 79 (Doc 234).

55. Msg (U), Hq AFSC/CV to Hq USAF/RD, "EPARCS," 07/1555Z May 79 (Doc 235); Msg (U), Hq USAF/XR to Hq ADCOM/XP, "PARCS Radar Modification, PMD R-Q8043(5)," 01/1500Z Jun 79 (Doc 236).

56. DCS/Plans and Programs Hist Rpt, (S-Dec1 31 Dec 2009), XPDW, Jul-Dec 79, Tab C (material used U).

57. SSS (U), Brig Gen W. E. Lindeman, DCS/Plans, Policy and Requirements, ADC, to A/CS et al, "EPARCS Funding," 29 Feb 80.

58. Hist of ADCOM, 1977-78 (S-Revw 31 Dec 99), pp 111, 112 (material used (S-Revw 98)).

59. Ibid., p 112; Msg (S-Revw 2 Jan 99), Hq FTD/XO to Hq ADCOM/DOF, "DSP Deployment," 04/2030Z Jan 79; Msg (S-Dec1 1 Dec 99), CINCAD/CC to Hq USAF/XOO/RDS/PAX, "DSP Launch Initiation," 15/1530Z Feb 79; Msg (S-Revw 31 Dec 79), CINCAD to AIG 951, "Commander's Semi-annual Summary, 1 Oct 78 - 31 Mar 79," 17/0045Z Apr 79.

60. Msg (S-Revw 1 Dec 98), SAMSO/SZD to ASTG, Cape Canaveral/LV, "DSP Launch," 31/2355Z Jan 79; Msg (S-Dec1 1 Dec 99), CINCAD/CC to Hq USAF/XOO/RDS/PAX, "DSP Deployment," 07/2300Z Mar 79; Msg (S-Revw 1 Dec 99), SAMSO/SZD to

6555 ASTG, Cape Canaveral/LV, "DSP Launch Update," 02/2300Z May 79; Msg (S-Revw 1 Dec 98), AFSCF/SZB to SAMSO/CC, "DSP Orbital Report," 11/0915Z Jun 79; Msg (S-Revw 1 Dec 99), CINCAD to AIG 951, "Commander's Semi-annual Summary," 1 Apr-30 Sep 79," 16/1057Z Oct 79.

61. Msg (S-Revw 1 Dec 99), Hq ADCOM/DO to AFSC/SDO/SDS, "Flight 8 Turnover," 10/2325Z Jul 79 (Doc 237).

62. SSS (S-Dec1 1 Dec 91), Brig Gen W. E. Lindeman, DCS/Plans and Programs, ADCOM, to A/CC et al, "Defense Support Program (DSP) Improvements Status," 24 Apr 79 (Doc 238); Msg (S-Revw 1 Dec 99), Hq ADCOM/DO to Hq TAC/DO, "CI-1 System," 28/1715Z Feb 79).

63. Msg (S-Revw 1 Dec 99), CINCAD/CC to Hq USAF/XOO/RDS, "DSP Operational Satellites," 08/0255Z Aug 79 (Doc 239).

64. SSS (S-Dec1 31 Dec 91), Brig Gen W. E. Lindeman, DCS/Plans and Programs, ADCOM, to CC et al, "Defense Support Program (DSP) Improvements Status," 24 Apr 79 (Doc 238); Msg (S-Revw 1 Dec 99), CINCAD to AIG 951, "Commander's Semi-annual Summary, 1 Apr-30 Sep 79," 16/1057Z Oct 79 (Hist File 22, Hist ADCOM/ADC, 1979); Msg (S-Revw 1 Dec 2000), CINCAD to AIG 951, "Commander's Semi-annual Summary, 1 Oct 79-31 Mar 80," 15/2130Z Apr 80 (Hist File 22, Hist ADCOM/ADC, 1979).

65. Ibid.; Atch 2 (S-Dec1 25 Jul 91), "DSP Paper," to Ltr (U), Gen J. E. Hill, CINCAD to Hon G. P. Dinneen, AsstSecDef (C3I), N.S., 31 Jul 79 (Doc 240).

66. SSS (S-Dec1 31 Dec 91), Brig Gen W. E. Lindeman, DCS/Plans and Programs, ADCOM to A/DO, "Simplified Processing Station (SPS) Alternatives," 12 Jan 79, with 1 Atch, Msg (S-Dec1 31 Dec 96), ADCOM/XP to Hq USAF/RDQ et al, same subject, 17/1930Z Jan 79 (Doc 241); Hist of ADCOM (S-Revw 31 Dec 99), 1977-78, pp 115-117 (material used S-Revw-96).

67. SSS (S-Dec1 7 Feb 91), Brig Gen W. E. Lindeman, DCS/Plans and Programs, ADCOM, to A/DO et al, "Simplified Processing Station (SPS) Overseas Site," 20 Feb 79, with 1 Atch, Msg (S-Dec1 7 Feb 91), Hq ADCOM/XP to Hq USAF/PAX et al, same subject, 02/2125Z Mar 79 (Doc 242); Msg (S-Dec1 27 Mar 85), Hq USAF/PAX to Hq ADCOM/XP, " . . . (SPS) Overseas Siting," 06/2000Z Apr 79; Msg (S-Dec1 27 Mar 85), Hq ADCOM/XO to Hq USAF/PAX et al, " . . . (SPS) Overseas Siting," 02/2130Z May 79 (Doc 243); SSS (S-Dec1 27 Mar 85), Brig Gen W. E. Lindeman, DCS/Plans and Programs, ADCOM, to A/DO et al, " . . . (SPS) Overseas Siting," 10 Dec 79, with 1 Atch, Msg (S-Dec1 27 Mar 85), Hq ADCOM/XP to Hq USAF/PAX

et al, " . . . (SPS) Overseas Siting," 17/1430Z Dec 79 (Doc 244).

68. SSS (S-Dec1 31 Dec 99), Brig Gen W.E. Lindeman, DCS/Plans and Programs, ADCOM, to A/DO, " . . . (SPS) Alternatives," 12 Jan 79, with 1 Atch, Msg (S-Dec1 31 Dec 96), Hq ADCOM/XP to Hq USAF/RDQ et al, 17/1930Z Jan 79 (Doc 241).

69. Msg (S-Dec1 31 Dec 98), Hq USAF/RDS et al to Hq ADCOM/XP, "DSP Data Survivability Enhancements," 16/1845Z Feb 79 (Doc 245).

70. Ltr (S-Dec1 17 Feb 85), Hon Charles W. Duncan, Jr., DepSecDef, 20 Mar 79; Ltr (S-Dec1 28 Feb 85) (Doc 246), Gen J. E. Hill, CINCAD, to Hon Charles W. Duncan, Jr., DepSecDef, 20 Mar 79 (Doc 247).

71. Msg (S-Revw 31 Dec 79), CINCAD to AIG 9S1, "Commander's Semi-annual Summary, 1 Oct 78-31 Mar 79," 17/0045Z Apr 79 (Hist File 22, Hist of ADCOM, 1979); Msg (U), Hq USAF/XP/DO to Hq ADCOM/XP/DO, "PMD Clarification Request . . .," 27/1530Z Mar 79; Msg (U), Hq ADCOM/DOP to Hq SAC/NE/DOC, "Integration of SPS into CCPDS," 18/1815Z Apr 79.

72. Msg (S-Revw 1 Dec 99), Hq ADCOM/XP to Hq AFTEC/TE, "Request for SPS IOT&E Extension," 25/2200Z May 79 (Doc 248); Msg (S-Revw 1 Dec 99), AFTEC/CC to Hq ADCOM/XP/DO, "SPS IOT&E Extension," 01/1636Z Jun 79 (Doc 249); Msg (S-Revw 31 Dec 99), Hq ADCOM/XP to Hq AFTEC/TE, "Continued SPS Test Requirements," 12/1500Z Jun 79 (Doc 250).

73. Msg (S-Revw 1 Dec 99), AFTEC/CC to Hq ADCOM/XP/DO, "Termination of SPS IOT&E," 15/2030Z Jun 79 (Doc 251); SSS (S-Dec1 14 Jun 91), Col L. L. Churchill, Spec Asst, (J5), Asst DCS/Plans and Programs (NORAD), to A/CV et al, " . . . (PMD) Change Request," 19 Jun 79 (Doc 252); Msg (S-Dec1 14 Jun 91), CINCAD/CV to Hq USAF/RDS, " . . . (PMD) Change Request," 22/1730Z Jun 79 (Doc 253).

74. Ibid.; Msg (S-Dec1 12 Jul 91), Hq USAF/XOO/RDS to CINCAD/CV, "Simplified Processing Stations," 12/1840Z Jul 79 (Doc 254).

75. Msg (S-Revw 1 Dec 98), SAMSO/SZJ to Hq AFSC/SDS, "Continued Simplified Processing Support," 01/1415Z Aug 79 (Doc 255).

76. Position Paper on SPS Turnover (S-Revw 31 Dec 79), Atch to SSS (S-Revw 31 Dec 91), Brig Gen W. E. Lindeman, DCS/Plans and Programs, ADCOM, to A/CO et al, "SPS Turnover Status Review," 20 Aug 79 (Doc 256).

77. SSS (U), Col W. R. Kenty, Asst DCS/Plans and Programs, ADCOM, to A/CC et al, "SPS Turnover Status Review," 14 Sep 79 (Doc 257); Msg (U), Hq SD/SZ to Hq ADCOM/XPD, " . . . (SPS) Turnover," 31/2300Z Oct 79 (Doc 258).

78. SSS (S-Revw 31 Dec 91), Brig Gen W. E. Lindeman, DCS/Plans and Programs, ADCOM, to A/CC et al, "SPS Turnover Status," 21 Nov 79 (Doc 259); Msg (S-Revw 1 Dec 99), OLA 2162CS/LGK to 216CS Buckley ANGB, " (S) Move of the SPS to Permanent Site," 07/1310Z Nov 79.

79. Msg (S-Revw 1 Dec 99), CINCAD/CS to CINCSAC/CS/SX, "Management Transfer Date for OLAE Hq ADCOM Cornhusker AAP, NE," 16/2215Z Nov 79 (Doc 260).

NOTES

CHAPTER III - SPACE

1. Msg (S-Revw-31-Dec 99), CINCAD to AIG 951, "Commander's Semi-Annual Summary, 1 Oct 78-31 Mar 79," 17/0045Z (in Hist File 22).

2. Msg (S-Revw-99), CINCAD to AID 951, "Commander's Semi-Annual Summary, 1 Apr-30 Sep 79," 16/0105Z Oct 79 (ADC Hist File 22); SSS (U), Brig Gen W.E. Lindeman, DCS/Plans and Programs, ADCOM, to A/CS et al, "MOTIF Transition Program," 18 Sep 79 (Doc 262).

3. Activation: OLAA 46 AERODW, 1 Apr 79 (ADCOM SO G-174, 31 Oct 78); inactivation as OLAA 46 AERODW, 1 Oct 79 (ADCOM SO G-173, 24 Sep 79); activated as OLAA, Hq ADCOM, 1 Oct 79 (ADCOM SO G-173, 24 Sep 79; inactivated as OLAA, Hq ADCOM, 30 Nov 79 (ADCOM SO G-241, 30 Nov 79); activated as OLAA, 1st STRATAD, SAC 30 Nov 79 (SAC SO G-59, 23 Nov 79).

4. Hist (S-Revw-99) ADCOM, 1977-78, pp 142-144 (material used S-Revw 98).

5. Msg (S-Dec1-31 Dec 86), Hq PACAF to CINCPAC (quoting Hq USAF Msg 02/1530Z Jan 79), "Spacetrack Radar Site," 25/2001Z Jan 79.

6. Msg (S-Revw-8 Feb 87), Hq USAF/XOO to Hq PACAF/XP, "Spacetrack Radar Site," 14/2045Z Feb 79.

7. Msg (S-Revw-8 Feb 87), CINCPAC to PACAF, "Space-track Radar Site," 01/0150Z Mar 79; Msg (S-Dec1-31 Dec 85), PACAF/DEE to Hq ADCOM/DEE, "FY-81 MCP PACBAR," 0212305Z Aug 79.

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ADCOM PAD 79-2 (U), "Inactivation 778 RADS, Harve AFS, ND," 2 Mar 79 (Doc 344); ADCOM PAD 79-3 (U), "Inactivation 786 RADS, Minot AFS, ND," 16 Mar 79 (Doc 345); ADCOM PAD 79-4 (U), "Inactivation 779 RADS, Opheim AFS, MT," 21 Mar 79 (Doc 346).

11. Msg (U), ADCOM to 23AD, 111515Z May 79 (Doc 347); Talking Paper (U), ADCOM DCS/Plans and Programs, "23AD Sensor Site Transition to JSS," 11 Sep 79 (Doc 348); ADCOM PAD 79-11 (U), "Inactivation 692 RADS, Baudette AFS, MN," 18 Jun 79 (Doc 349); Msg (U), CINCAD to 23AD, 061915Z Jul 79 (Doc 350); ADCOM PAD 79-12 (U), "Inactivation 753 RADS, Sault Sainte Marie AFS, MI," 22 Jun 79 (Doc 351); ADCOM PAD 79-13 (U), "Inactivation 665 RADS, Calumet AFS, MI," 2 Jul 79 (Doc 352); ADCOM PAD 79-17 (U), "Activation Operating Location AC, 23ADS, Nashwauk City, MN," 28 Aug 79 (Doc 353).

12. Interest Paper (U), ADCOM DCS/Plans, Policy, Programs, and Requirements, "JSS Actions Pertaining to 26AD," 1 Oct 79 (Doc 354).

13. Msg (U), 20NR to ADCOM, 202000Z Jul 79 (Doc 355); Ltr (U), ADCOM DCS/Operations to DCS/Plans and Programs, "Dauphin Island, AL, Height Finder (HF) Radar and UHF Radios," 30 Jul 79 (Doc 356); Ltr (U), ADCOM DCS/Plans and Programs to DCS/Logistics, "Dauphin Island Contract Maintenance," 1 Aug 79 (Doc 357); Msg (U), ADCOM to 20NR, 241500Z Aug 79 (Doc 358); Msg (U), Defense Fuel Rgn to ADC, et al., 191400Z Sep 79 (Doc 359); Msg (U), ADCOM to 3246 Test Wg, 202230Z Sep 79 (Doc 360); Msg (U), 20NR to ADCOM, 201410Z Sep 79 (Doc 361); Msg (U), CINCNORAD to 20 NR, 271800Z Sep 79 (Doc 362); Msg (U), 20NR to ADTAC, 301930Z Nov 79 (Doc 363).

14. Hist (S-Revw-00) (material used U), ADCOM, Jan 77-Dec 78, pp 47-48.

15. Hist Rprt (S-Decl-00) (material used U), ADCOM DCS/Plans, Policy, Programs, and Requirements, Jul-Dec 79 (Office of Hist. file 25.16); Msg (U), OSAF to ALMAJCOM, 281830Z Mar 79 (Doc 364).

16. Ibid.

17. Hist Rpt (S-Decl-00) (material used U), ADCOM DCS/Plans and Programs, Jan-Jun 79 (Office of Hist. file 25.16).

18. Ibid.; Hist (S-Revw-00) (material used U), ADCOM, Jan 77-Dec 78, pp 47-48.

19. Msg (S-Revw-99) (material used U), CINCAD to sub-units, 151905 Oct 79 (Doc 365); Hist Rprt (S-Decl-00) (mate-

rial used U), ADCOM DCS/Plans, Policy, Programs and Requirements, Jul-Dec 79 (Office of Hist. file 25.16).

20. Hist Rprt (S-Dec1-00) (material used U), ADCOM DCS/Plans and Programs, Jan-Jun 79 (Office of Hist. file 25.16).

21. Hist (S-Revw-00), ADCOM, Jan 77-Dec 78, p 51.

22. Hist Rprt (S-Dec1-00) (material used U), ADCOM DCS/Plans, Policy, Programs, and Requirements, Jul-Dec 79 (Office of Hist. file 25.16); Journal (S-Revw-00) of Discussions and Decisions, Canada-U.S., 153rd PJBD Meeting held at Royal Roads Military College, British Columbia, 12-15 Jun 79, pp 11-12; Journal (S-Revw-00) of Discussions and Decisions, Canada-U.S., 154th PJBD Meeting held at Canadian Forces Base North Bay, Canada, 10-12 Oct 79, p 19.

23. Ltr (U), NORAD DCS/Operations to DCS/Plans and Programs, "Relocation of ROCCs," 28 Feb 79 (Doc 366); Talking Paper (U), DCS/Plans and Programs, ADCOM "SW Region Operations Control Center (ROCC)," 16 Apr 79 (Doc 367); Ltr (U), NORAD DCS/Plans and Programs to DCS/Operations, "Relocation of ROCCs," 2 Mar 79 (Doc 368).

24. Ltr (U), NORAD DCS/Operations to DCS/Plans, Policy, Programs, and Requirements, "JSS/ROCC Site Designators," 5 Dec 79 (Doc 369); Ltr (U), ADCOM DCS/Operations to ADCOM Rgns, "Joint Surveillance System (JSS) Site Designators," 28 Mar 79 (Doc 370).

25. Hist (S-Revw-00) of ADCOM, Jan 77-Dec 78, p 56.

26. Msg (U), AFTEC to USAF, info ADCOM, 182131Z Jan 79 (Doc 371); Msg (U), AFTEC to USAF, info ADCOM, 022132Z Feb 79 (Doc 372); Msg (U), AFTEC to ADCOM, 072030Z May 79 (Doc 373); Msg (U), ADCOM to ESD, 092031Z May 79 (Doc 374); Msg (U), ESD to AFTEC, info ADCOM, 211915Z May 79 (Doc 375); Msg (U), AFTEC to USAF, info ADCOM, 062040Z Jul 79 (Doc 376); Msg (U), ESD to ADCOM, 061800Z Aug 79 (Doc 377); Msg (S-Revw-99), CINCAD to ADCOM sub-units, 151905Z Oct 79 (Doc 365); Talking Paper (S-Dec1-85), ADCOM DCS/Plans, Policy, Programs & Requirements, "CONUS Over-the-Horizon Backscatter (OTH-B) Radar System (U)," 15 Mar 79 (Doc 378).

27. Msg (S-Revw-87), USAF to AFSC, info ADCOM, 201345Z Sep 79 (Doc 379); Msg (U), ESD to AFSC, info ADCOM, 031900Z Oct 79 (Doc 380); Msg (U), AFTEC to ESD, info ADCOM, 121632Z Oct 79 (Doc 381); Msg (S-Dec1-87), USAF to AFSC, info ADCOM, 051830Z Dec 79 (Doc 382).

28. Msg (S-Revw-99), CINCAD to ADCOM sub-units, 151905Z Oct 79 (see Doc 365).

29. Journal of Discussions and Decisions (S-Revw-00), 153rd Permanent Joint Board on Defense (PJBD), Canada-U.S., Royal Roads Military College, British Columbia, 12-15 Jun 79, p 15 (Office of Hist. file 24.3).

30. Ltr (U), ADCOM DCS/Plans and Programs to DCS/Comptroller, "Seek Skyhook O&M Funding," 22 Jan 79 (Doc 383); Ltr (U), ADCOM DCS/Plans and Programs to Det 1, SAMTEC/TOEP, "AN/FYQ-47 Maintenance Manning for Cudjoe Key AFS, FL, 24 Jan 79 (Doc 384); Talking Paper (U), SEEK SKYHOOK, 15 Mar 79 (Doc 385); Ltr (S-Revw-99), ADCOM/DCS/Operations to DCS/Plans and Programs, "SEEK SKYHOOK Operational Need/Utility (U)," 27 Jul 79 (Doc 386); Msg (U), ADCOM to JCS, 132300Z Nov 79 (Doc 387); Msg (C-Revw-85), 20NR to ADCOM, 141930Z Dec 79 (Doc 388); Msg (U), ADCOM to JCS, 211720Z Dec 79 (Doc 389); Hist Rprt (S-Dec1-00), ADCOM DCS/Plans and Programs, Jan-Jun 79 (Office of Hist file 25.16).

31. Msg (S-Revw-98), USAF to ADCOM et al, 202030Z Jul 79 (Doc 390).

32. ADCOM Objectives Plan (S-FRD) (material used S-Dec1-00), 1985-1990, pp 75-77.

33. Journal (S-Revw-00), Discussions and Decisions, Canada-U.S., for the 153rd PJBD Mtg, Royal Roads Military College, British Columbia, 12-15 Jun 79; Ltr (S-Revw-99), ADCOM DCS/Operations to Combat Operations Center, "Commander's Semiannual Summary (SITREP)," 30 Mar 79 (Doc 391); Hist Rprt (S-Dec1-00), DCS/Plans, Policy, Programs, and Requirements, Jul-Dec 79 (Office of Hist. file 25.16).

34. Msg (S-Revw-99) (material used U), CINCAD to sub-units, 151905Z Oct 79 (Doc 365); Msg (U), NORAD to NDHQ, 191830Z Nov 79 (Doc 392).

35. Ltr (U), NORAD DCS/Communications, Electronics, and Computer Resources (J-6) to DCS/Operations, et al, "NORAD/ADCOM E-3A Communications Plan," 25 Apr 79 (Doc 393).

36. Hist (S-Revw-00), ADCOM, Jan 77-Dec 78, p 53; Ltr (U), NORAD DCS/Operations to DCS/Plans and Programs, "Statement of Operational Need (SON) for NORAD/ADCOM E-3A Battle Staff Enhancements," 27 Apr 79 (Doc 394).

37. Msg (S-Revw-93), 25NR to CINCNORAD, 301915Z Apr 79 (Doc 395).

38. Ltr (U), Gen Hill, CINCNORAD, to Gen Creech, Comdr of TAC (no subj), 30 Apr 79 (Doc 396).

39. Opnl Eval Rprt (S-Revw-96), 25th NORAD Rgn (AMALGAM MUTE 79-6), 19-29 Aug 79 (Doc 397).

40. Statement of Operational Need for NORAD/ADCOM E-3A Battle Staff Enhancements, 18 Oct 79 (Doc 398); Msg (U), NORAD to TAC, 061600Z Jul 79 (Doc 399).

41. Hist (S-Revw-00) (material used S-Revw-99), ADCOM, Jan 77-Dec 78, p 55.

42. Ltr (S-Revw-91), ADC to All ADCOM Rgns, et al, "What's Going On (U)," 11 Sep 79 (Doc 400).

43. Journal (S-Revw-00) of Discussions and Decisions, Canada-U.S., 154th PJBD Meeting held at Canadian Forces Base North Bay, Ontario, 10-12 Oct 79.

44. Hist Rprts (S-Dec1-00), NORAD DCS/Plans, Policy, Programs, and Requirements, Jan-Jun 79, and Jul-Dec 79 (Office of Hist. file 25.16).

45. Msg (S-Dec1-4 Jan 85), CINCAD to JCS, "17th DSES Deactivation," 091930Z Jan 79 (Doc 401); Msg (S-Dec1-19 Jan 85), JCS to CINCAD, "17th DSES Deactivation," 252039Z Jan 79 (Doc 402); Interest Paper (S-Dec1-84), ADCOM DCS/Operations, "Deactivation of 17th DSES," 11 Jan 79 (Doc 403); Interest Paper (S-Dec1 on Act), ADCOM DCS/Plans & Programs, "17 DSES, Malmstrom AFB, MT (U)," 8 Jan 79 (Doc 404).

46. Msg (C-Dec1-85), USAF to ADCOM, "EB-57 Programming and Training Requirements (U)," 061950Z Feb 79 (Doc 405).

47. Msg (U), CINCAD to USAF, "Electronic Countermeasures Training for Interceptor Aircrews," 011530Z May 79 (Doc 406).

48. Msg (S-Revw-15 May 85), ADCOM to USAF, "EB-57 Tasking (U)," 252220Z May 79 (Doc 407); Interest Paper (S-Dec1-85), ADCOM DCS/Operations, "EB-57 OPLAN 4409 (U)," 27 Apr 79 (Doc 408).

49. Msg (U), ADCOM to USAF, "Request for 158 DSEG Active Duty Augmentation," 202000Z Jun 79 (Doc 409); Msg (U), ADCOM to 24AD, "Inactivation of 17DSES," 12 Sep 79 (Doc 410); Hq ADCOM SO G-133 (U), 18 Jul 79 (Doc 411); ADCOM PAD 79-7 (U), "Inactivation 17DSES, Malmstrom AFB, MT," 25 May 79

(Doc 412); Msg (C-Dec1-85), USAF to ADCOM, "Early Closure of the 17 Defensive System Evaluation Sq (DSES) (U)," 162000Z Apr 79 (Doc 413); Msg (U), CINCAD to USAF, "Permanent Display of EB-57 Aircraft," 262310Z Apr 79 (Doc 414).

50. Hist (U), The Air Defense of the United States, Hq ADC, Jun 51, p 215; ADCOM SO-205 (U), 19 Oct 79 (see Spt. Docs to this history.).

51. Plan (S-Revw-99), North American Aerospace Defense Objectives Plan 1982-1989 (U), Jul 79, p 55 (ADCOM Hist file 24).

52. Hist (S-Revw-00), ADCOM, Jan 77-Dec 78, p 69.

53. Hist Rprt (U), Directorate of Air Defense Operations, DCS/Operations, ADCOM, Jan-Jun 79 (ADCOM Hist file 25.4).

54. Ibid.

55. Msg (S-Dec1-20 Dec 85), NORAD to ANMCC, et al, "NORAD Force Summary As Of 20 Dec 79 (U)," 201620Z Dec 79 (Doc 415).

56. NORAD Reg 55-3 (S-Revw-98), "CINCNOAD/CINCAD Weapons Readiness States and Readiness Postures (U)," 16 Oct 78 (see Doc 55 to Hist of NORAD, Jan 77-Dec 78, p 197).

57. ADC Movement Order MO-1 (U), 1 Nov 78 (Doc 416).

58. Hist (S-Dec1-98) of ADCOM, Jan-Dec 76, pp 44-45; Hist Rpts (S-Dec1-00) DCS/Plans, Policy, Programs, and Requirements, Jan-Jun 79, Jul-Dec 79 (Office of Hist. file 25.16).

59. Msg (S-Dec1-84), HQ DA to CINCAD, et al, "Army CONUS and Alaska Defense (U)," 042015Z Jan 79 (Doc 417).

60. Memo (S-Dec1-86), ADCOM DCS/Operations to CINCAD, et al, "CONUS/Alaska Air Defense (U)," 18 Jan 79 (Doc 418); Msg (S-Dec1-86), USAF to ADCOM, "Removal of ADA (U)," 271815Z Jan 79 (Doc 419); Msg (S-Dec1-31 Dec 86), AAC to NORAD, "Removal of ADA (U)," 280500Z Jan 79 (Doc 420); Msg (S-Dec1-86), ADCOM to USAF, "Removal of ADA (U)," 290050Z Jan 79 (Doc 421); Staff Summary Sheet (S-Dec1 on PA). "NORAD DCS/Operations to CINCNOAD, "Removal of ADA (U)," 1 Feb 79

(Doc 422); Discussion Paper (U), NORAD DCS/Operations, "Army CONUS and Alaska Air Defense," (Doc 423); Talking Paper (S-Dec1-87), NORAD DCS/Operations, "ADA Loss in Florida (U)," 13 Mar 79 (Doc 424); Memo (S-Dec1-99), CJCS to SecDef, "Army CONUS and Alaska Air Defense (U)," 13 Feb 79 (Doc 425).

61. Memo (S-Dec1-85) for Chairman of the JCS from Sec-Def, "Army CONUS and Alaska Air Defense (U)," 28 Mar 79 (Doc 426).

62. Msg (S-Dec1-81), HQ DA to CDRTRADOC, info ADCOM, "Army CONUS & Alaska Air Defense (U)," 022151Z Apr 79 (Doc 427); Msg (U), JCS to CINCNORAD, et al, "Army CONUS/Alaska ADA (U)," 061542Z Apr 79 (Doc 428); Msg (U-FOUO), CDR FGRSCOM to ADCOM, "Army CONUS/Alaska ADA (U)," 092012Z Apr 79 (Doc 429); Msg (U), CDR USAMILPERCEN to DA, et al, "Personnel on Orders to the 31st ADA BDE, Homestead AFB, FL and the 1-45 ADA BN, AK 111000Z Apr 79 (Doc 430); Msg (U), CINCNORAD to 31st ADA, et al, "Army CONUS/Alaska ADA," 152157Z Apr 79 (Doc 431).

APPENDICES

APPENDIX I

LINEAGE AND HONORS DATA

Unit Designation: AEROSPACE DEFENSE COMMAND (ADCOM)
(Major Command)

Previous Designation: Same. (See Hist of ADCOM, 1 Jan '7 -
31 Dec 78, p 225.)

Authority: DAF ltr 322 (AFOMO 797F), 10 Nov 50, subj:
Designation of Tactical Air Command and Air Defense Command as
Major Commands, Reassignment, Establishment, Discontinuance,
and Redesignation of Certain Other Units and Establishments.

Higher Hq: HQ USAF

Commander in Chief: General James E. Hill
6 Dec 77 - 31 Dec 79
Lt Gen James V. Hartinger
1 Jan 80 -
(SO AA-2179, 20 Dec 79,
HQ USAF, Wash, DC)

Vice Commander in Chief: Maj Gen William C. Burrows
19 Aug 77 - 31 Jan 79
Maj Gen Bruce K. Brown
1 Feb 79 - 12 Feb 79
(ADCOM SO G-14, 25 Jan 79)
Maj Gen Warren C. Moore
12 Feb 79 -
(SO AA-2145, 19 Dec 78,
HQ USAF, Wash DC)

Assigned Units:

4799th USAF Special Activities Squadron, Colorado Springs,
CO
ADCOM Combat Operations Center, Cheyenne Mountain Complex,
CO

Units Reassigned to Hq ADCOM from 1 Oct to 1 Dec 79 Due to
Reorganization:

* b1
*Classified CONF by 496L Security Classification Guide, 1 Jun 79,
Declassify on 1 Dec 98.

2nd Communications Squadron, Buckley Field, CO (per ADCOM SO G-182, 28 Sep 79).
 5th Defense Space Communications Squadron, Woomera Aprt, Australia (per ADCOM SO G-182, 28 Sep 79).
 6th Missile Warning Squadron, Otis AFB, MA (per ADCOM SO G-182, 28 Sep 79).
 7th Missile Warning Squadron, Beale AFB, CA (per ADCOM SO G-182, 28 Sep 79).
 12th Missile Warning Squadron, Thule AB, Greenland (per ADCOM SO G-182, 28 Sep 79).
 20th Missile Warning Squadron, Eglin AFB, FL (per ADCOM SO G-182, 28 Sep 79).
 4684th Air Base Group, Sondrestrom AB, Greenland (per ADCOM SO G-182, 28 Sep 79).

Assigned Units Lost:

10th Aerospace Defense Squadron, Vandenberg AFB, CA
 (inactivated 1 Nov 79, per ADCOM SO G-206, 23 Oct 79).
 4603rd Management Engineering Flight, Colorado Springs, CO
 (inactivated 1 Oct 79, per ADCOM SO G-181, 28 Sep 79).
 4690th Aerospace Intelligence Squadron, Cheyenne Mountain
 Complex, CO (inactivated 7 Dec 79, per ADCOM SO G-246,
 5 Dec 79).

Units Reassigned to the Tactical Air Command (TAC):

Air Defense Weapons Center, Tyndall AFB, FL (reassigned on
 1 Oct 79, per ADCOM SO G-205, 19 Oct 79).
 Air Forces Iceland, FPO New York 09571 (reassigned on 1 Oct
 79, per ADCOM SO G-205, 19 Oct 79).
 20th Air Division, Fort Lee AFS, VA (reassigned on 1 Oct 79,
 per ADCOM SO G-205, 19 Oct 79).
 21st Air Division, Hancock Field, NY (reassigned on 1 Oct
 79, per ADCOM SO G-205, 19 Oct 79).
 23rd Air Division, Duluth IAP, MN (reassigned on 1 Oct 79,
 per ADCOM SO G-205, 19 Oct 79).
 24th Air Division, Malmstrom AFB, MT (reassigned on 1 Oct
 79, per ADCOM SO G-205, 19 Oct 79).
 25th Air Division, McChord AFB, WA (reassigned on 1 Oct 79,
 per ADCOM SO G-205, 19 Oct 79).
 26th Air Division, Luke AFB, AZ (reassigned on 1 Oct 79,
 per ADCOM SO G-205, 19 Oct 79).
 425th Munitions Support Squadron, Colorado Springs, CO
 (reassigned on 1 Oct 79, per ADCOM SO G-205, 19 Oct 79).

Units Reassigned to the Strategic Air Command (SAC):

2nd Communications Squadron, Buckley Field, CO (reassigned
 on 1 Dec 79, per ADCOM SO G-241, 30 Nov 79).
 5th Defense Space Communications Squadron, Woomera ASN,
 Australia (reassigned on 1 Dec 79, per ADCOM SO G-241,
 30 Nov 79).

6th Missile Warning Squadron, Otis AFB, MA (reassigned on 1 Dec 79, per ADCOM SO G-241, 30 Nov 79).
 7th Missile Warning Squadron, Beale AFB, CA (reassigned on 1 Dec 79, per ADCOM SO G-241, 30 Nov 79).
 12th Missile Warning Squadron, Thule AB, Greenland (reassigned on 1 Dec 79, per ADCOM SO G-241, 30 Nov 79).
 14th Missile Warning Squadron, MacDill AFB, FL (reassigned on 1 Dec 79, per ADCOM SO G-241, 30 Nov 79).

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20th Missile Warning Squadron, Eglin AFB, FL (reassigned on 1 Dec 79, per ADCOM SO G-241, 30 Nov 79).
 46th Aerospace Defense Wing, Peterson AFB, CO (reassigned on 1 Oct 79, per ADCOM SO G-205, 19 Oct 79).
 4602nd Computer Services Squadron, Peterson AFB, CO (reassigned on 1 Oct 79, per ADCOM SO G-205, 19 Oct 79).
 4614th Contracting Squadron, Colorado Springs, CO (reassigned on 1 Oct 79, per ADCOM SO G-205, 19 Oct 79).
 4684th Air Base Group, Sondrestrom AB, Greenland (reassigned on 1 Dec 79, per ADCOM SO G-241, 30 Nov 79).

Unit Reassigned to the Air Force Communications Service (AFCS):¹

4754th Radar Evaluation Squadron, Hill AFB, UT (reassigned on 1 Oct 79, per ADCOM SO G-205, 19 Oct 79).

Units Attached: None.

Station: Peterson AFB, CO

Aircraft Flown: None.

Awards and Decorations: None.

Emblem: No change.

** Classified SECRET by 496L Security Classification Guide, 1 Jun 79, Declassify on 1 Dec 98.

1. The Air Force Communications Service (AFCS) was redesignated the Air Force Communications Command (AFCC), effective 15 Nov 79.

SOURCE: ADCOM Special Orders G Series, for 1979 (see supporting documents to this history); NORAD/ADCOM Pamphlet 20-5 (U), subj: Directory of NORAD/ADCOM Units, 15 Mar 79 (Doc 432).

APPENDIX II

LINEAGE AND HONORS DATA

Unit Designation: NORTH AMERICAN AIR DEFENSE COMMAND
(Binational Command)

Previous Designation: Same. (Established on 12 September 1957 per agreement of the Canadian Minister of National Defence and the JCS on 6 September 1957. The NORAD Agreement was concluded on 12 May 1958 for a period of ten years and renewed on 12 May 1968 and 12 May 1973. A new NORAD Agreement was concluded on 12 May 1975 for a period of five years. (Agreement TIAS 8085 effected by exchange of notes, signed at Washington, May 8, 1975, effective May 12, 1975.)

Authority: Exchange of notes, Ambassador of Canada and U. S. Secretary of State, May 12, 1958, Washington, D. C.

Higher Hq: JCS

Commander in Chief: Gen Earle E. Partridge
(12 Sep 57 - 31 Jul 59)
Gen Laurence S. Kuter
(1 Aug 59 - 31 Jul 62)
Gen John K. Gerhart
(1 Aug 62 - 31 Mar 65)
Gen Dean C. Strother
(1 Apr 65 - 31 Jul 66)
Gen Raymond J. Reeves
(1 Aug 66 - 31 Jul 69)
Gen Seth J. McKee
(1 Aug 69 - 30 Sep 73)
Gen Lucius D. Clay, Jr.
(1 Oct 73 - 31 Aug 75)
Gen Daniel James, Jr.
(1 Sep 75 - 6 Dec 77)
Gen James E. Hill
(6 Dec 77 - 31 Dec 79)
Lt Gen James V. Hartinger
(1 Jan 80 -
(SO AA 2179, 20 Dec 79
HQ USAF, Wash., D.C.)

Deputy Commander in Chief: Air Marshal C. Roy Slemon, RCAF
(12 Sep 57 - 15 Aug 64)
Air Marshal C. R. Dunlap, RCAF
(15 Aug 64 - 24 Aug 67)
Air Marshal William R. MacBrien, RCAF
(25 Aug 67 - 22 Jan 69)

(Lineage and Honors Data - NORAD (contd))

Lt Gen Frederick R. Sharp, CF
 (23 Jan 69 - 14 Sep 69)
 Lt Gen Edwin M. Reyno, CF
 (15 Sep 69 - Sep 72)
 Lt Gen R. J. Lane, CF
 (Sep 72 - Oct 74)
 Lt Gen Richard C. Stovel, CF
 (Oct 74 - Sep 76)
 Lt Gen David R. Adamson, CF
 (Sep 76 - 7 Aug 78)
 Lt Gen Kenneth E. Lewis, CF
 (8 Aug 78 -)
 (Msg (U), ND HQ to CINCNORAD,
 201240Z Mar 78)

Assigned Units:Units Assigned Directly to HQ NORAD:

Alaskan NORAD Region, Elmendorf AFB, Anchorage, AK
 NORAD/ADCOM Joint Support Group, Colorado Springs, CO
 20th NORAD Region, Ft. Lee AFS, VA
 21st NORAD Region, Hancock Field, New York
 22nd NORAD Region, CFB North Bay, Hornell Heights,
 Ontario, Canada
 23rd NORAD Region, Duluth IAP, MN
 24th NORAD Region, Malmstrom AFB, MT
 25th NORAD Region, McChord AFB, WA
 26th NORAD Region, Luke AFB, AZ

Assigned Units Lost: NoneUnits Attached: NoneStation: Colorado Springs, COAircraft Flown: NoneAwards and Decorations: None

Emblem: Approved by JCS (J1DM-447-72), Memorandum for
 the Commander in Chief, North American Air
 Defense Command, subj: NORAD Organizational
 Emblem and Medallion, 31 July 1972. (See
 attached sheet.)

SOURCE: Histories of NORAD/CONAD/ADC, 1957-78
 (material used U); msg (U), ND HQ to CINCNORAD,
 201240Z Mar 78 (Doc 433).

GLOSSARY OF ABBREVIATIONS

AAC	Alaskan Air Command
ABM	Antiballistic missile
ADA	Air Defense Artillery
ADC	Aerospace Defense Center
ADCOM	Aerospace Defense Command
ADCOS	Air Defense Combat Operations Staff
ADP	Automated Data Processing
ADTAC	Air Defense Tactical Air Command
ADWC	Air Defense Weapons Center
AE	Architectual engineering
AERODS	Aerospace Defense Squadron
AERODW	Aerospace Defense Wing
AF	Air Force
AFB	Air Force Base
AFCs	Air Force Communications Service
AFENA	Air Force Element, NORAD/ADCOM
AFETR	Air Force Eastern Test Range
AFLC	Air Force Logistics Command
AFMPC	Air Force Military Personnel Center
AFS	Air Force Station
AFSC	Air Force specialty code/Air Force Systems Command
AFTEC	Air Force Test and Evaluation Center
AFWTR	Air Force Western Test Range
AK	Alaska
AL	Alabama
ALCOP	Alternate Command Post
ALMV	Air launched miniature vehicle
ALTAIR	ARPA Long Range Tracking and Instrumentation Radar
ANG	Air National Guard
ANGB	Air National Guard Base
ANMCC	Alternate National Military Command Center
ANR	Alaskan NORAD Region
APDM	Amended Program Decision Memorandum
ARPA	Advanced Research Projects Agency
ARTCC	Air Route Traffic Control Center
ASAT	Anti-satellite System
AWACS	Airborne Warning and Control System
AWACW	Airborne Warning and Control Wing
AWC	Air Weapons Controller
AW(F)	All Weather (Fighter)
AZ	Arizona
BAA	Backup aircraft authorized
BDE	Brigade

BLOS	Beyond line of site
BMEWS	Ballistic Missile Early Warning System
BMO	Ballistic Missile Office
CA	California
CADIN	Continental Air Defense Integration North
CF	Canadian Forces
CGS	CONUS Ground Station
CINC	Commander in Chief
CINCAD	Commander in Chief, Aerospace Defense Command
CINCLANT	Commander in Chief, Atlantic
CINCNOAD	Commander in Chief, North American Air Defense Command
CINCSAC	Commander in Chief, Strategic Air Command
CJCS	Chairman, Joint Chiefs of Staff
CO	Colorado
COC	Combat Operations Center
COMAAC	Commander, Alaskan Air Command
CONUS	Continental United States
CSAF	Chief of Staff, United States Air Force
CSOC	Consolidated Space Operations Center
CSS	Communication System Segment
DAD	Designated alert detachment
DAFC	Department of the Air Force Civilians
D-Colo	Democrat-Colorado
DCS	Deputy Chief of Staff
Def	Defense
Det	Detachment
DEW	Distant Early Warning
DMSP	Defense Meteorological Satellite Program
DOD	Department of Defense
DSARC	Defense System Acquisition Review Committee
DSES	Defense System Evaluation Squadron
DSP	Defense Support Program
DT&E	Development Test and Evaluation
DVP	Design Verification Period
D&W	Detection and Warning
ECCM	Electronic counter-countermeasure
ECM	Electronic countermeasure
EDEW	Enhanced Distant Early Warning
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EM	Enlisted Men
EMC	Electromagnetic compatibility
EMP	Electromagnetic pulse
EMR	Electromagnetic radiation
EOC	Equivalent Operational Capability

EPARCS	Enhanced Perimeter Acquisition Radar Attack Characterization System
ERS	Experimental Radar Systems
ESD	Electronic Systems Division
ETS	Experimental test site
FAA	Federal Aviation Administration
FIG	Fighter Interceptor Group
FIS	Fighter Interceptor Squadron
FL	Florida
FOC	Final operational capability
FOI	Follow-on Interceptor
FORSCOM	Army Forces Command
FY	Fiscal year
GA	Georgia
GAO	General Accounting Office
GATR	Ground-to-air Transmitter/Receiver
GBL	Ground based laser
GCN	Ground communications network
GEODSS	Ground-based Electro-optical Deep Space System
GIUK	Greenland, Iceland, and United Kingdom
GMT	Guided missile test
GPS NCC	Global Positioning System NORAD Control Center
GS	General Schedule
GTS	General Telephone Service Corp.
HAC	Hughes Aircraft Company
HI	Hawaii
HQ	Headquarters
IBM	International Business Machines
IC	Iceland
ICBM	Intercontinental Ballistic Missile
i.e.	That is
IG	Inspector General
IOC	Initial operational capability
IOT&E	Initial operational test and evaluation
IP	Implementation period
ISA	International Security Affairs
ITV	Instrumented test vehicle
JCS	Joint Chiefs of Staff
JETS	Joint Enroute Terminal System
JMP	Joint Manpower Program
JSS	Joint Surveillance System
JTD	Joint Table of Distribution
JUSCADS	Joint U.S./Canada Air Defense Study

LA	Louisiana
LOA	Letter of Offer and Acceptance
LOC	Limited operational capability
LRR	Long range radar
Ltr	Letter
MA	Massachusetts
MAJCOM	Major command
MCP	Military Construction Program
MD	Maryland
ME	Maine
Memo	Memorandum
MEW	Missile Early Warning
MFP	Major Force Programs
MG/R	Message Generator/Recorder
MGT	Mobile Ground Terminals
MI	Michigan
MIP	Missile impact predictor
MN	Minnesota
MOA	Memorandum of Agreement
MOT	Ministry of Transportation
MOTIF	Maui Optical Tracking and Identification Facility
MPC	Military Personnel Center
MPF	Multipurpose Facility
Msg	Message
Mt.	Mount
MT	Montana
MUX	Multiplexor
MWO	Missile Warning Officer
MWS	Missile Warning Squadron
NADIS	NORAD/ADCOM Digital Interface System
NAS	NORAD Alerting System/Naval Air Station
NASA	National Aeronautics and Space Administration
NATO	North American Treaty Organization
NAVSPASUR	U.S. Navy Space Surveillance System
NCMC	NORAD Cheyenne Mountain Complex
NCOC	NORAD Combat Operations Center
ND	North Dakota
NDHQ	National Defence Headquarters
NEACP	National Emergency Airborne Command Post
NEPA	National Environmental Policy Act
NJ	New Jersey
NM	New Mexico
NMCC	National Military Command Center
NOE	NORAD Operational Evaluation
NORAD	North American Air Defense Command
NR	NORAD Region

NSSR	NORAD Satellite Situation Reports
NY	New York
ODC	Operator display console
OGS	Overseas ground station
OK	Oklahoma
OL	Operating location
O&M	Operations and maintenance
OPLAN	Operational plan
OR	Oregon
ORB	Operations Review Board
OSD	Office of the Secretary of Defense
OSM	Operational Support Module
OTH-B	Over-the-horizon Backscatter
PA	Pennsylvania
PAA	Primary aircraft authorized
PACAF	Pacific Air Forces
PACBAR	Pacific radar barrier
PAR	Perimeter acquisition radar
PARCS	Perimeter Acquisition Radar Attack Characterization System
PD	Programs Document
PJBD	Permanent Joint Board on Defense
PMAG	Program Management Assistance Group
PMD	Program Management Directive
PMOC	Prototype Mission Operations Center
POM	Program Objective Memorandum
PPBS	Planning, Programming, and Budgeting System
PPlan	Programming Plan
RCA	Radio Corporation of America
RCC	Radar Control Center
R-Colo	Republican-Colorado
R&D	Research and Development
Ret	Retired
R/HDC	Radar height data converter
RIF	Reduction in force
RM&A	Reliability, maintainability and availability
ROC	Required Operational Capability
ROCC	Region Operations Control Center
SAC	Strategic Air Command
SAGE	Semi-automatic ground environment
SAMSO	Space and Missile Systems Organization
SC	South Carolina
SD	Space Division
SecDef	Secretary of Defense
SED	Sensor evolution development
SLBM	Sea-launched ballistic missile

SMOPS	Space Mission Organization Planning Study
SMSA	Standard Metropolitan Statistical Area
SOC	Satellite Operations Center/Statement of Operational Concept
SON	Statement of operational need
SOPC	Shuttle Operations and Planning Center
SPADATS	Space Detection and Tracking System
SPADOC	Space Defense Operations Center
SPO	System Program Office
SPS	Simplified Processing Station
Sq	Squadron
SQT	System qualification training
St.	Saint
STC	Satellite Test Center
TAC	Tactical Air Command
TCV	Technical Control Unit
TDDL	Time division data link
TDY	Temporary duty
TFS	Tactical Fighter Squadron
TFW	Tactical Fighter Wing
TNCC	Tyndall NORAD Control Center
TOR	Terms of Reference
TPR	Trained personnel requirement
TRW	Thompson-Ramo-Woolridge Corp.
TV	Television
TX	Texas
UHF	Ultra high frequency
UK	United Kingdom
UMD	Unit Manning Document
U.S.	United States
USA	United States Army
USAF	United States Air Force
USAFE	United States Air Forces in Europe
U.S.C.	United States Code
USCINCEUR	United States Commander in Chief, Europe
USEUCOM	United States European Command
USN	United States Navy
USSR	Union of Soviet Socialist Republics
VA	Virginia
VT	Vermont
WB	Wage Board
WRS	Weapons Readiness State

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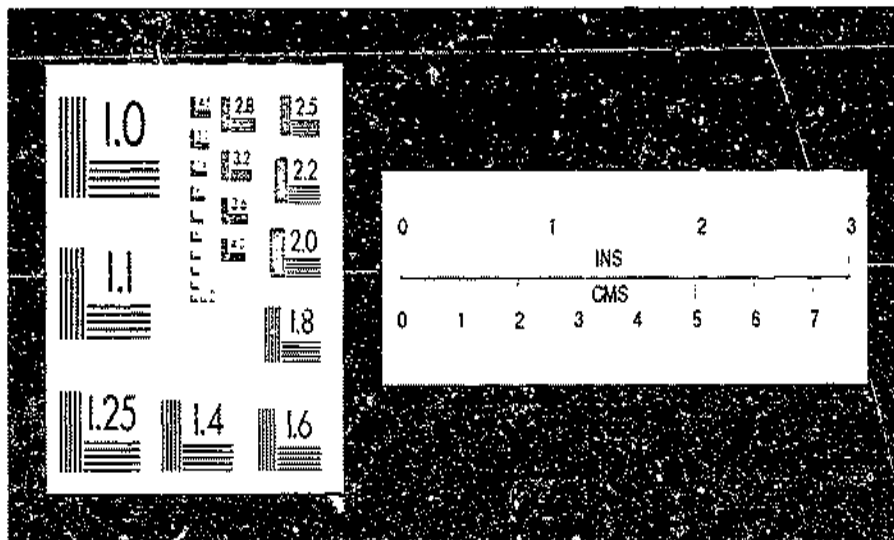
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153. (U) Ltr to J-5 from Maj Gen Robert W. Fye, CofS, NORAD, subj: U.S. Army Manpower Resources in NORAD, 11 Apr 79.
154. (U) Ltr from Maj Gen Robert W. Fye, CofS, NORAD, subj: Coordination of Out of Cycle Change to the NORAD Joint Manpower Program (JMP), 13 Jun 79.
155. (U) Ltr to JCS/J-5 from Col Joedan J. Saunders, Director of Manpower and Organization, DCS/Plans and Programs, subj: 1 Oct 79 Out of Cycle Change to the NORAD/ADCOM Joint Manning Program (JMP), 14 Aug 79, with 1 atch.
156. (S) Staff Summary Sheet to NORAD COC/CC/DP from Maj Gen Bruce K. Brown, DCS/Operations, subj: Increased Manpower Authorizations for Det 1, NORAD COC, Tinker AFB, OK (U), 2 May 79, with 1 atch.
157. (S) Ltr to NORAD/DO from Maj Gen R. R. Barber, DCS/Plans and Programs, NORAD, subj: Increased Manpower Authorizations for Det 1, NORAD COC, Tinker AFB, OK (Your Ltr, 3 May 79) (U), with 1 atch.
158. (U) Ltr to ADCOM/XPM from Lt Col Harry H. Hurst, Deputy Chief, Programs Division, Directorate of Manpower and Organization, subj: Increased Manpower Requirements for E-3A NORAD Mission Crews (Your Ltr, 14 May 79), 30 Jul 79, with 1 atch.
159. (U) Memorandum for Record, Col Joedan J. Saunders, Director/Manpower and Organization, DCS/Plans and Programs, subj: Redistribution of SPADOC Resources, 11 Jul 79.
160. (U) Ltr to Air Divisions from ADCOM DO, subj: Weapons Controller Manning and Experience Levels, 16 Jan 79.
161. (U) Briefing, Monthly Management Review by the Comptroller - 26 October 1979, Briefer - Colonel Louis R. Ravetti, 26 Oct 79, with 1 atch.
162. (S) Staff Summary Sheet to CS from Col Frank R. Wisneski, Command Inspector General, subj: Summary of USAF/IG Inspection Report USAF Support to NORAD (U), 27 Feb 79, with 1 atch.
163. (S) Ltr to AF/AC et al, from Maj Gen Len C. Russell, Deputy Inspector General for Inspection and Safety, subj: Interim Action Reports, Special Inspection of USAF Support to NORAD, PN 80-2056 (U), 18 Jan 80, with 2 atchs.

164. (S) Briefing, Outbrief of IG Inspection given to CINCNORAD and Staff by Mr. Bob Nolan from the Air Force Inspection and Safety Center at Nolan, 15 Dec 79.
165. (S) Staff Summary Sheet to IG et al, from Maj Gen Bruce K. Brown, DCS/Operations, subj: CINC Visit with USAF IG (U), 2 Jan 80, with 1 atch.
166. (S) Memo to Maj Gen Bruce K. Brown from Maj William P. Knudsen, Executive to the CINC, subj: Topic N/DO2 SSS 23 Nov 79, 26 Nov 79, Memo to Maj Gen Bruce K. Brown from Maj William P. Knudsen, Executive to the CINC, same subj, 26 Nov 79, Staff Summary Sheet to N/CS et al, from Maj Gen Bruce K. Brown, DCS/Operations, subj: Operations Review Board Report, 23 Nov 79, 1 atch, Operating Review Board Report (S).
167. (S) Defense Intelligence Agency DACOM Transmittal Sheet to Capt. Budura, ADCOM, from Maj Boyd, OJCS J-3 EA Div, subj: NEACP 535-79, 19 Nov 79.
168. (U) Memo from Washington, subj: Alert Alarm, 9 Nov 79. Also a collection of newspaper clippings regarding the 9 Nov Incident.
169. (S) SecState WashDC to RUFHNA/USMission USNATO et al, subj: Soviets and the False Missile Alert, 280022Z Nov 79.
170. (U) Memo for the Record, to ATSD/LA et al, from Maj Pat Sweeney, OATSD (Legislative Affairs) subj: Continuation of Congressional Briefings in Response to NORAD Alert Inquiries, 5 Dec 79.
171. (S) Msg, J-3 to ASD/C3I Wash DC et al, subj: Meeting Between Members of NORAD Staff and Sen Hart, 202115Z Dec 79.
172. (U) Ltr to ADCOM/DO2, from Col Philip A. Deering, Deputy Commander for Data Automation, subj: Operational Review Board Status, 29 Nov 79, 1 atch.
173. (S) Msg, J-3 to JCS/C3S Wash DC, subj: NORAD ORB Update (U), 291708Z Nov 79.
174. (S) Msg, DO to JCS/J3/C3S/WWMCS Eval Wash DC et al, subj: False Indications at 091551Z Nov 79, 301956Z Nov 79.

175. (S) Msg, NORAD/J6 to HQ USAF/XOK Wash DC et al, subj: Missile Warning Scenario Control, 050215Z Dec 79.
176. (S) Background Paper, "9 Nov 1979 False Indications", by Maj Sapp, NORAD/DOPC, 26 Dec 79.
177. (S) Staff Summary Sheet to N/DO from Lt Col Kenneth E. Lager, Configuration/Control, subj: Action Item Management Book (U), 04 Jan 80, 1 atch.
178. (S) Msg, NORAD/J-3 to JCS/J-3/C3S Wash DC, subj: Suspension of 427M Development Testing (U), 261415Z Dec 79.
179. (C) Memo to Col Brandt from Col James K. Lowe, Director, Air Defense Operations, subj: Operations Review Board (PHASE III Report), 14 Nov 79.
180. (S) Memo to Col Brandt from Col William H. Riley, Director of Command & Control Systems, subj: Operations Review Board (Phase III Report), 16 Nov 79.
181. (S) Msg, ADCOM/DOO to 20NR/DO Ft Lee AFS VA et al, subj: Unit Response to (NAWS) Warning Alert, 212200Z Nov 79.
182. (S) Msg, NORAD/DO to JCS/J3 Wash, subj: Missile Attack Warning (S), 290001Z Nov 79.
183. (S) Msg, NORAD/DOO to AIG et al, subj: Missile Attack Warning (S), 302307Z Nov 79.
184. (S) Msg, NORAD/DO to AIG et al, subj: NAS Amber Warning Test (U), 071728Z Dec 79.
185. (S) Msg, NORAD/DO to AIG/DO et al, subj: Missile Attack Warning/Interim Emergency Change I to N/A Reg 55-19; Vol III, 15 May 79 (U); 171800Z Jan 80.
186. (U) Msg, NORAD/J6 to JCS/C3S Wash DC et al, subj: Review of NORAD Alert System (NAS) Circuits, 252300Z Jan 80.
187. (FOUO) Interest Paper "Proposed Relocation of the Command Section to the Cheyenne Mountain Complex" by Col William R. Kenty, Asst DCS/Plans and Programs, 8 Jan 80.

188. (U) Ltr to Gen Jones from Gen James E. Hill, Commander in Chief, no subject, 27 Dec 79.
189. (S) Staff Summary Sheet to A/XP from Lt Col Peter M. Fleming, Chief, Programs & Rqmts Div, subj: Talking Papers for 1979 CINCs' Conference (U), 13 Nov 79, 1 atch.
190. (S) Msg, CINCAD/CC to JCS/CJCS Wash DC et al, subj: FY 1981 CJCS Military Posture Statement(U), 182055Z Sep 79.
191. (S) Interest Paper "BMEWS Modernization (U)" by Col Robert M. Kronebusch, Director, Missile and Space Defense, 11 Jan 80.
192. (U) Msg, AFSC/SDE Andrews AFB MD to RUWRNLB/HQ ADCOM/XPB, subj: BMEWS Modernization, 152200Z Feb 79.
193. (S) Msg, AFSC/CC Andrews AFB MD to CSAF/CC Wash DC, et al, subj: Enhanced Perimeter Acquisition Radar Characterization, 161516Z Mar 79.
194. (S) Msg, SSO/CC ADCOM to AFSSO/CC USAF et al, subj: EPARCS (U), 282220 Mar 79.
195. (S) Staff Summary Sheet to A/DE et al from Maj Gen R. Barber, DCS/Plans and Programs, NORAD, subj: BMEWS Modernization (U), 16 Feb 79, 1 atch.
196. (U) Staff Summary Sheet to A/AC et al from Brig Gen William E. Lindeman, DCS/Plans and Programs, ADCOM, subj: BMEWS IBM 7090 Replacement, 18 May 79.
197. (S) Talking Paper "BMEWS Modernization" by Brig Gen William E. Lindeman, DCS/Plans and Programs, ADCOM, 10 Jan 79.
198. (S) Staff Summary Sheet to A/XP et al from Col James P. Foster, Jr, Dep Dir Missile and Space Def, subj: BMEWS Replacement Study, 25 Apr 79, 1 atch.
199. (S) Ltr to Dr. Gerald P. Dinneen from Gen James E. Hill, Commander in Chief, no subject, 31 Jul 79, 1 atch.
200. (S) Staff Summary Sheet to A/DO et al from Brig Gen William E. Lindeman, DCS/Plans and Programs, ADCOM, subj: BMEWS Improvement Status (U), 8 Jan 79.

201. (U) Staff Summary Sheet to A/DO et al from Col William R. Kenry, Asst DCS/Plans and Programs, ADCOM, subj: BMEWS Improvement Status, 22 Jan 79.
202. (U) Memo to XP from Col Robert M. Kronebusch, Director, Missile and Space Defense, subj: BMEWS IBM 7090 Replacement, 6 Sep 79, 1 atch.
203. (S) Msg, CINCNORAD/CC to CSAF/CC Wash DC et al, subj: BMEWS Modernization (U), 151730Z Oct 79.
204. (S) Staff Summary Sheet to A/IN et al from Brig Gen William E. Lindeman, DCS/Plans and Programs, ADCOM, subj: BMEWS Modernization, 25 Oct 79, 2 atch.
205. (S) Memo to Assistant Secretary of Defense (C³I) from Mr. Eugene H. Kopf, Principal Deputy Assistant Secretary Research, Development and Logistics, subj: BMEWS Upgrade (U)-Information Memorandum, 16 Oct 79.
206. (U) Msg, AFSC/SDE/ACB Andrews AFB MD to REUAHQ/ RDXP/ Wash DC, subj: BMEWS Modernization Funding (U), 042004Z Dec 79.
207. (S) Background Paper "BMEWS Modernization (U)" by Brig Gen William E. Lindeman, DCS/Plans and Programs, 13 Dec 79.
208. (U) Msg, ADCOM/XP to ESD L G Hanson AFB MA et al, subj: Pave PAWS Car Submission, 152000Z Jun 79.
209. (S) Msg, ADCOM/DOF to REUKJCS/NMCC Wash DC, et al, subj: Status of Pave PAWS Missile Warning Data, 062310Z Jul 79.
210. (U) Staff Summary Sheet to A/DE et al from Col William R. Kenry, Asst DCS/Plans and Programs, ADCOM, subj: Otis Pave PAWS Power Problems, 8 Aug 79, 1 atch.
211. (U) Msg, ADCOM/DO to HQ USAF/XOX/XOO/XOKS et al, subj: Otis Pave PAWS Power Problems and Continued Operation of AN/FSS-7's at Ft Fisher AFS NC and Charleston AFS ME, 151945Z Aug 79.
212. (S) Interest Paper "6th Missile Warning SQDN (Otis AFB) Pave PAWS (U)" by Maj Gen C. A. LA France, DCS/Plans and Programs, NORAD, 17 Oct 79.

213. (S) Msg, ADCOM/DO to HQ USAF/XOO/PAX/ACB Wash DC et al,
subj: Pave Paws Missile Warning Data (U), 071645Z Sep
79.
214. (U) Staff Summary Sheet to A/DO et al from Col William
R. Kenty, Asst DCS/Plans and Programs, ADCOM, subj:
PAVE PAWS Power Problems, 31 Aug 79, 1 atch.
215. (S) Talking Paper "PAVE PAWS (U)" by Col William R.
Kenty, Asst DCS/Plans and Programs, ADCOM, 27 Sep 79.
216. (U) Msg, ADCOM/DO to HQ USAF/XOO/PAX/ACB Wash DC et al,
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erations, 282145Z Sep 79.
217. (U) Msg, ADCOM/DO to HQ USAF/XOO/PAX/ACB Wash DC et al,
subj: Termination of Otis Pave Paws and AN/FSS-7 Sixty
Day Dual Operations, 071710Z Nov 79.
218. (U) Talking Paper "OTIS PAVE PAWS" 15 Jan 80.
219. (U) Staff Summary Sheet to N/DO2 et al, from Lt Col
Francis L. Nance, Director of Space & Msl Wrng Opera-
tions, subj: Impacts of AN/FSS-7 East Coast Extension,
12 Jun 79, 2 atchs.
220. (U) Msg, HQ USAF/XOO/PAX/ACB to RUWRNLB/HQ NORAD et al,
subj: Extension of AN/FSS-7 Operations at Charleston
AFS, ME and Ft. Fisher AFS, NC, 201531Z Jun 79.
221. (U) Msg, HQ USAF/XOO/PAX/ACB/XOX/RDS to RUWRNLB/HQ
ADCOM et al, subj: Continued Operation of AN/FSS-7
Radars at Ft. Fisher AFS, NC, and Charleston AFS, ME,
071330Z Sep 79.
222. (U) Msg, HQ ADCOM/DO to HQ SAC/AC/SX Offutt AFB NE et
al, subj: Continued East Coast FSS-7 Operation, 162205Z
Nov 79.
223. (U) Msg, HQ SAC/ACB to RUWRNLB/HQ ADCOM et al, subj:
Continued East Coast FSS-7 Operations, 202300Z Nov 79.
224. (U) Msg, CINCAD/CS to CINCSAC/CS Offutt AFB NE et al,
subj: East Coast AN/FSS-7 SLBM Detection and Warning
Radar Continued Operation, 191420Z Nov 79.
225. (U) Msg, CINCNORAD/CC to DET 5/CC/14MWS Ft Fisher AFS
NC et al, subj: Special Recognition, 21200Z Dec 79.

226. (S) Staff Summary Sheet to A/DO et al from Brig Gen William E. Lindeman, DCS/Plans and Programs, ADCOM, subj: Position Paper on PARCS (U), 10 Jan 79, 1 atch.
227. (S) Msg, ADCOM/XP to HQ USAF/RDQ Wash DC et al, subj: EPARCS (U), 262145Z Dec 78.
228. (S) Memo to AFSSO/CSAF/CC et al from AFSSO/AFSC/CC, subj: Enhanced Perimeter Acquisition Radar Characterization System (EPARCS) (U), 032330Z Jan 79.
229. (S) Msg, AFSSO/CC to AFSSO/CC AFSC et al, subj: Enhanced Perimeter Acquisition Radar Characterization System (EPARCS) (Your Msg 032330Z Jan 79) (U), 101300Z Mar 79.
230. (S) Msg, SSO ADCOM/CC to AFSSO USAF/CC et al, subj: EPARCS (U), 282220 Mar 79.
231. (S) Msg, HQ AFSC/SDE to RUEOFFA/ESD/OC Hanscom AFB MA et al, subj: Enhanced Perimeter Acquisition Radar Characterization System (EPARCS), 161516Z Mar 79.
232. (U) Msg, HQ USAF/RDSD to RUEOAWA/HQAFSC/SDE Andrews AFB MD et al, subj: EPARCS, 231600Z Mar 79.
233. (S) Msg, CINCAD/CC to HQ USAF/RD Wash DC et al, subj: EPARCS (U), 111645Z Apr 79.
234. (S) Msg, HQ USAF/RD to RUWRNLB/HQ CINCAD/CC et al, subj: EPARCS (U), 261350Z Apr 79.
235. (U) Msg, AFSC/CV to RUEAHQA/HQ USAF/RD Wash DC et al, subj: EPARCS. (HQ USAF/RD 261350Z Apr 79). 071555Z May 79.
236. (U) Msg, HQ USAF/RDS to RUEOAWA/HQ AFSC/SD Andrews AFB MD et al, subj: PARCS Radar Modification, PMD R-Q 8043(5), 011500Z Jun 79.
237. (S) Msg, HQ ADCOM/DO to AFSC/SDO/SDS Andrews AFB MD et al, subj: Flight 8 Turnover (U), 102325Z Jul 79.
238. (S) Staff Summary Sheet to A/DO et al from Brig Gen William E. Lindeman, DCS/Plans and Programs, ADCOM, subj: Defense Support Program (DSP) Improvements Status (U), 24 Apr 79.

239. (S) Msg, CINCAD/CC to USAF/XOO/RDS Wash DC et al,
subj: DSP Operational Satellites (U), 080255Z Aug 79.
240. (S) Ltr to Dr. Gerald P. Dinneen from Gen James E.
Hill, Commander in Chief, no subject, 31 Jul 79, 1
atch.
241. (S) Staff Summary Sheet to A/DO from Brig Gen William
E. Lindeman, DCS/Plans and Programs, ADCOM, subj:
Simplified Processing Station (SPS) Alternatives (U),
12 Jan 79, 1 atch.
242. (S) Staff Summary Sheet to A/DO et al from Brig Gen
William E. Lindeman, DCS/Plans and Programs, ADCOM,
subj: Simplified Processing Station (SPS) Overseas
Site (U), 20 Feb 79, 1 atch.
243. (S) Msg, ADCOM/XP to HQ USAF/PAX Wash DC et al, subj:
Simplified Processing Station (SPS) Overseas Siting
(Your Msg 062000 Apr 79) (Notal OLAE) (U), 022130Z May
79.
244. (S) Staff Summary Sheet to A/DO et al from Brig Gen
William E. Lindeman, DCS/Plans and Programs, ADCOM,
subj: Simplified Processing Station (SPS) Overseas
Siting (U), 10 Dec 79, 1 atch.
245. (S) Msg, HQ USAF/RDS/XOO to RUWRNLB/HQ ADCOM et al,
subj: DSP Data Survivability Enhancements (U), 161845Z
Feb 79.
246. (S) Ltr to Gen James E. Hill from Charles W. Duncan,
Jr, Deputy Secretary of Defense, no subject, 27 Feb 79.
247. (S) Ltr to Charles W. Duncan, Jr from Gen James E.
Hill, Commander in Chief, no subject, 20 Mar 79.
248. (S) Msg, HQ ADCOM/XP to HQ AFTEC/TE Kirtland AFB NM
et al, subj: Request for SPS IOT&E Extension (U),
252200Z May 79.
249. (S) Msg, AFTEC/CC to RUWRNLB/HQ ADCOM/XP/DO et al,
subj: SPS IOT&E Extension (U), 011636Z Jun 79.
250. (S) Msg, ADCOM/XP to AFTEC/TE Kirtland AFB NM et al,
subj: Continued SPS Test Requirements, 121500Z Jun
79.

251. (S) Msg, AFTEC/CC to RUWRNLB/ADCOM/XP/DO et al, subj: Termination of SPS IOT&E (U), 152030Z Jun 79.
252. (S) Staff Summary Sheet to A/DO et al from Col Churchill, subj: Program Management Directive (PMD) Change Request, 19 Jun 79.
253. (S) Msg, CINCAD/CV to HQ USAF/RDS Wash DC et al, subj: Program Management Directive (PMD) Change Request, 221730Z Jun 79.
254. (S) Msg, HQ USAF/XOO/RDS to RUWTFBA/AFTEC/CC Kirtland AFB et al, subj: Simplified Processing Stations (SPS), 121840Z Jul 79.
255. (S) Msg, SAMSO/SZJ to HQ AFSC/SDS Adreus AFB MD et al, subj: Continued Simplified Processing Support (U), 011415Z Aug 79.
256. (S) Memo to ADCOM/XP from Col Robert M. Kronebusch, Director, Missile and Space Defense, no subject, 16 Aug 79, 2 atchs.
257. (U) Staff Summary Sheet to A/DO et al from Col William R. Kenty, Asst DCS/Plans and Programs, ADCOM, subj: SPS Turnover Status Review, 14 Sep 79.
258. (U) Msg, HQ SD/SZ to ADCOM/XPD, subj: Simplified Processing Station (SPS) Turnover, 312300Z Oct 79.
259. (S) Staff Summary Sheet to A/DO et al from Brig Gen William E. Lindeman, DCS/Plans and Programs, ADCOM, subj: SPS Turnover Status (U), 21 Nov 79.
260. (S) Msg, CINCAD/CS to CINCSAC/CS/SX Offutt AFB NE et al, subj: Management Transfer Date for OLAE HQ ADCOM Cornhusker AAP NE (U), 162215Z Nov 79.
261. (U) Ltr to HQ NORAD/PAM from Lt Col Terence J. O'Rourke, Chief, Tec Data & Systems Div, subj: Information on 1979 Space Activities, 4 Jan 80.
262. (U) Staff Summary Sheet to A/DO et al from Brig Gen William E. Lindeman, DCS/Plans and Programs, ADCOM, subj: MOTIF Transition Program, 18 Sep 79.
263. (S) Background Paper, "AN/GPS-10 Relocation Project (U), 25 Jul 79.

264. (S) Staff Summary Sheet to A/DO et al from Col William R. Kenty, Asst DCS/Plans and Programs, ADCOM, subj: Status Report on PACBAR Eastern and Western Sites, 11 Apr 79.
265. (S) Interest Paper, "The ALTAIR Radar" 1 Jun 79.
266. (U) Background Paper, "Ground-Based Electro-Optical Deep Space Surveillance (GEODSS) System" 17 Apr 79.
267. (U) Background Paper, "Ground-Base Electro-Optical Deep Space Surveillance (GEODSS) System" 1 Jun 79.
268. (C) Staff Summary Sheet to A/DO et al from Col William R. Kenty, Asst DCS/Plans and Programs, ADCOM, subj: Eastern Atlantic GEODSS Site, 10 Apr 79, 1 atch.
269. (U) Msg, HQ USAF to HQ AFSC et al, subj: GEODSS Site Survey Status, 201930Z Mar 79.
270. (U) Msg, ADCOM to ESD L G Hanscom AFB MA et al, subj: GEODSS Car Submission, 152000Z Jun 79.
271. (C) Msg, SecState to Amembassy Madrid et al, subj: Ground-Based Electro-Optical Deep Space Surveillance System (GEODSS), 181317Z Jan 80.
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274. (U) Msg, NORAD COC to NASA et al, subj: Skylab NORAD Satellite Situation Report (NSSR) Nr. 1, 051555Z APR 79.
275. (U) Msg, NORAD to CINCPANT Norfolk VA et al, subj: Skylab NORAD Satellite Situation Report (NSSR), 151750Z May 79.
276. (U) Msg, NOCC NASA GSFC Greenbelt MD to NASA HQS Wash DC et al, subj: Skylab Public Release Information No. 19, 121358Z Jul 79.
277. (S) Talking Paper, "10th AERODS-ADCOM Space Launch Advocacy Focal Point (U) 26 Apr 78.
278. (S-NOFORN) Staff Summary Sheet to N/DO from Col John W. Yocum, Acting Asst DCS for Space Operations, subj: NORAD Space Defense Relationships, 21 SEP 78.

279. (U) Ltr to Gen James E. Hill from Lt Gen Richard C. Henry, no subj, 16 Jan 79.
280. (U) Staff Summary Sheet to A/XP from Maj Gen Bruce K. Brown, DCS/Operations, subj: Reply to SAMSO/CC Ltr, 16 Jan 79, 6 Feb 79.
281. (U) Ltr to Lt Gen Richard C. Henry from Gen James E. Hill, no subj, 12 Mar 79.
282. (U) Msg, ADCOM to SAMSO LA AFS CA et al, subj: ADCOM SSP/DMSP Launch Support, 261555Z Apr 79.
283. (U) Staff Summary Sheet to A/XPX et al drafter Maj Krasinski, subj: Revised Program Management Directive for Defense Meteorological Satellite Program, 2 May 79.
284. (U) Msg, ADCOM to HQ USAF et al, subj: Program Management Directive for Defense Meteorological Satellite Program, 032004Z May 79.
285. (U) Interest Paper, "Issues Relating to the USAF Space Support Program, Defense Meteorological Satellite Program and the Tenth Aerospace Defense Squadron (10 AERODS)", 6 Jul 79.
286. (U) Interest Paper, "Switch of DMSP from THOR to ATLAS E/F Launch Vehicle", 15 Aug 79.
287. (U) Staff Summary Sheet to A/AC et al from Brig Gen William E. Lindeman, DCS/Plans and Programs, ADCOM, subj: Switch of Defense Meteorological Satellite Program (DMSP) from THOR to ATLAS, 15 Aug 79.
288. (S) Msg, ADCOM to HQ USAF et al, subj: Military Space Launch Capability (U), 172110Z Aug 79.
289. (U) Ltr to Col John F. Fowler from Gen James E. Hill, no subj, 25 Oct 79.
290. (U) Staff Summary Sheet to A/DO et al from Brig Gen William E. Lindeman, DCS/Plans and Programs, ADCOM, subj: Briefing-Transition of DMSP Satellites from Thor to Atlas Boosters, 27 Nov 79.
291. (U) Ltr to Gen Alton D. Slay from Gen James E. Hill, no subj, 5 Dec 79.

292. (S) Msg, ADCOM to AFSC Andrews AFB MD et al, subj: ADCOM Addendum to USAF Site Survey 78-21 (U), 6 Feb 79.
293. (C) Staff Summary Sheet to A/CS et al from Col Louis L. Churchill, Acting DCS/Plans and Programs, ADCOM, subj: STC II/SOC/GPS NCC Siting Criteria, 19 Jun 79, 1 atch.
294. (C) Background Paper, "Consolidated Satellite Operations Center", 2 Jul 79.
295. (C) Staff Summary Sheet to A/DO et al from Brig Gen William E. Lindeman, DCS/Plans and Programs, ADCOM, subj: SANSO Briefing on Consolidated Space Operations Center, 2 Jul 79, 1 atch.
296. (S) Staff Summary Sheet to A/DO et al from Brig Gen William E. Lindeman, DCS/Plans and Programs, ADCOM, subj: Consolidated Space Operations Center (CSOC) (U), 15 Jul 79.
297. (C) Msg, CINCAD to AFSC Andrews AFB MD et al, subj: (U) Consolidated Space Operations Center (CSOC), 091840Z Jul 79.
298. (C) Msg, CINCAD to CSAF Wash DC et al, subj: (U) Consolidated Space Operations Center, 092045Z Jul 79.
299. (C) Msg, HQ USAF to HQ AFSC et al, subj: CSOC Site Survey (U), 231940Z Aug 79.
300. (U) Msg, ADCOM to HQ USAF et al, subj: CSOC Site Survey (U), 301330Z Aug 79.
301. (U) Staff Summary Sheet to A/CS et al from Col William R. Kenty, Asst DCS/Plans and Programs, ADCOM, subj: CSOC Site Survey (U), 14 Sep 79.
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